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(54) Title: MATERIALS AND METHODS FOR THE MODIFICATION OF PLANT CELL WALL POLYSACCHARIDES (57) Abstract Novel isolated polynucleotides and polypeptides associated with the synthesis of plant cell wall polysaccharides are provided, together with genetic constructs comprising such sequences. Methods for using such constructs for the modulation of polysaccharide content in plants are also disclosed, together with transgenic plants comprising such constructs.		

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MATERIALS AND METHODS FOR THE MODIFICATION OF PLANT CELL WALL POLYSACCHARIDES

5 **Technical Field of the Invention**

This invention relates to the field of modification of cell wall polysaccharide content and composition in plants. More particularly, this invention relates to enzymes involved in the synthesis of plant cell wall polysaccharides and nucleotide sequences encoding such enzymes.

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Background of the Invention

Plant cells are characterised by having a rigid cell wall. These cell walls are comprised primarily of polymers of simple sugar monomers linked in a variety of linear or branched polymers known as polysaccharides. The most abundant simple sugar monomer is
15 glucose, and the most abundant polymer is cellulose. Cellulose is a linear, unbranched polymer, comprised of β -1,4 linked glucose monomers. Other polysaccharides found in plant cell walls include hemicellulose, which is a group of polysaccharides comprised of β -1,4 linked glucose monomers having side chains which may include sugars other than glucose. These side chains frequently include xylose, fucose, arabinose, and galactose. Pectins are
20 another type of polysaccharide found in plant cell walls. Pectins are acidic polysaccharides, which are generally comprised primarily of galacturonic acid and rhamnose sugar monomers. Amylose is an additional common plant polysaccharide which is not usually found as a major component of cell walls. It acts primarily as a storage material for glucose, rather than as a structural polymer. However, because amylose is comprised primarily of α -1,4-linked
25 glucose monomers, it is considered to be a related polymer from a biochemical and physiological perspective.

Plant polysaccharides have many uses. Certain plastics, such as cellulose acetate, and synthetic textiles, such as rayon, are made from cellulose. In addition, some biodegradable plastics and digestible medicine capsules, as well as medical fillers and fiber additives for
30 food, can be made from plant polysaccharides.

In foodstuffs, polysaccharides have a profound impact on food quality. Cell walls contribute to crispness in carrots, while degradation of cell walls is required for softening of fruits, such as peaches and tomatoes. In maize, increased amylose is desirable for cattle feed, but not for human consumption, and increased cell wall strength reduces digestibility. In fiber crops, such as timber, cellulose is the primary polymer of interest. Wood density, a fundamental measure of structural timber quality, is essentially a measure of cellulose content. In the paper pulping industry, efficiency is measured in terms of yield of cellulose. Clearly, the ability to increase cellulose content in timber is an important economic goal.

The sugars which make up plant cell wall polysaccharides are produced in the photosynthetic organs of plants. The sugars so produced are commonly converted into sucrose, a disaccharide consisting of glucose and fructose. Sucrose is transported throughout the plant, to wherever sugar monomers are called for. Thus, the photosynthetic organs are often referred to as a source, while tissues requiring large amounts of sugar monomers are referred to as a sink. Actively growing regions of the plant are generally sink tissues, as new cell wall synthesis requires large amounts of sugar monomers.

When the transported sucrose arrives at the sink destination, it must be converted into whichever kind of sugar monomer is required. The sugar monomers which make up plant cell walls are primarily 5- or 6-carbon sugars. Different sugars are generally distinguished by stereospecific orientation of hydroxyl groups. Plants contain a variety of enzymes, such as isomerases or epimerases, which can rapidly change the orientation of these hydroxyls. In addition, there are a number of enzymes which can add or remove a single carbon from a sugar monomer. The result is a single pool of sugar monomers which the plant can freely inter-convert into whichever kind is needed for cell wall synthesis.

Plant polysaccharides are thus biochemically and physiologically inter-related. All polymers compete for the same pool of sugar monomers, and all sugar monomers can be freely interconverted to other types. Degradation of any one polymer will provide building material for any other. Attempts to engineer changes in one polymer may therefore have pleiotropic effects on other polymers.

The rate of cell wall synthesis is dependent on both the availability of sugar monomers to serve as building blocks for the polymers of the wall, and the enzymes which polymerise those building blocks into polymers. Enzymes which are directly responsible for the

synthesis of the major cell wall polymers, such as cellulose, hemicellulose and pectin, may have a profound impact on the rate of cell wall synthesis. Source-sink relations may play an important role in limiting cell wall synthesis, if the availability of substrates becomes limiting. Polymer degrading enzymes may liberate sugar monomers from unnecessary polymers for use
5 in building new, desired polymers. Enzymes which can isomerise sugars from one form into another can convert the sugars into whichever kind is needed. Each of the different types of cell wall polysaccharides effectively competes for the same pool of sugar monomers, and each represents a potential source of monomers for any of the other polymers.

The final committed steps in cellulose biosynthesis involve a relatively small number
10 of enzymes. Cellulose synthase (CEL) is believed to function as part of a large, membrane-bound complex which also includes sucrose synthase (SUS: Amor et al., *Proc. Natl. Acad. Sci USA* 92:9353-9357, 1995) and annexin (ANX: Clark and Roux, *Plant Phys.* 109:1133-1139, 1995). This enzyme complex polymerises activated glucose into the cellulose polymer. The glucose is activated by UDP-glucose pyrophosphorylase (UGP), also known as UTP-
15 glucose-1-phosphate uridylyltransferase. These enzymes are believed to be sufficient for the biosynthesis of cellulose from glucose. Other than these steps, the availability of glucose appears to be the most significant rate-limiting step in cellulose biosynthesis.

Glucose is primarily stored in most plants as amylose. Plants routinely store amylose and degrade it to free up the glucose monomers, as needed. By inhibiting the efficiency of
20 glucose storage, or by increasing the liberation of glucose from amylose, the availability of glucose monomers for cellulose biosynthesis can be increased. The rate-limiting enzyme in the storage of glucose as amylose is ADP-glucose pyrophosphorylase (AGP), also known as ATP-glucose-1-phosphate adenyltransferase (Iglesias et al., *J. Biol. Chem.* 268:1081-1086, 1993). Conversely, the enzyme most responsible for liberating glucose from amylose is
25 amylase (AMA: Kawagoe and Delmer, *Genetic Engineering* 19:63-87, 1997).

These enzymes clearly will be important in the engineering of economically useful changes in cellulose biosynthesis. In addition, there are many other enzymes which may be useful in influencing plant cell wall polysaccharide biosynthesis. Other enzymes likely to be involved in cellulose biosynthesis include 1,4- β -cellobiohydrolase, β -glucosidase, calnexin,
30 cellobiose epimerase, cellobiose phosphorylase, cellulase A, dextranucrase, invertase, phosphodiesterase, phosphoglucomutase, sucrose phosphate synthase, sucrose phosphorylase,

UDP-glucose 4-epimerase and UDP-glucose dehydrogenase. Enzymes believed to be involved in hemicellulose biosynthesis include β -glucanase, arabinan synthase, GDP-fucose pyrophosphorylase, GDP-mannose pyrophosphorylase, 1,3 and 1,4- β -glucanases, 1,3 and 1,4- β -glucosidases, mannose-6-phosphate isomerase, *n*DP-hexose pyrophosphorylase, xyloglucan
5 endotransglycosylase and xyloglucan synthase. Enzymes likely to be involved in pectin biosynthesis include α -galactosidase, β -glucuronidase, exopolygalacturonase, glucuronosyl-transferase, pectin methyl-esterase, polygalacturonase and UDP-hexose-1-phosphate uridylyltransferase. Enzymes believed to be involved in amylose biosynthesis include α -glucosidase, amylopectin 6-glucanohydrolase, amylopectin-branching glycosyltransferase,
10 β -amylase, branching enzyme, inulosucrase, isoamylase, isomaltase, levansucrase, starch phosphorylase and starch synthase. Enzymes likely to be involved in the interconversion of 5-carbon sugars include 2-dehydro-3-deoxy-gluconokinase, aldehyde reductase, arabinose isomerase, D-arabinitol dehydrogenase, D-xylulose reductase, endo-1,4- β -xylanase, exo-1,4- β -xylanase, L-arabinose isomerase, L-ribulokinase, L-xylulokinase, phospho-ribulokinase,
15 ribose 5-phosphate isomerase, ribulose-phosphate-3-epimerase, ribulose-phosphate-4-epimerase, transaldolase, transketolase, xylose isomerase and xylulokinase. Enzymes likely to be involved in interconversion of 6-carbon sugars include 6-phospho-fructo-1-kinase, 6-phospho-fructo-2-kinase, trehalose phosphate synthase, aldolase, aldose 1-epimerase, D-fructokinase, D-galactokinase, fructose 1,6-diphosphatase, gluconolactonase, glucose
20 1-phosphatase, glucose 6-phosphatase, glucose 6-phosphate dehydrogenase, glucose-phosphate isomerase, hexokinase, phosphoglucomutase, trehalase, trehalose phosphatase and UDP-galactose dehydrogenase.

While DNA sequences encoding some of the enzymes involved in the biosynthetic pathways of plant cell wall polysaccharides have been isolated for certain species of plants,
25 genes encoding many of the enzymes in a wide range of plant species have not yet been identified. Thus, there remains a need in the art for materials useful in the modification of cell wall polysaccharide content and composition in plants.

Summary of the Invention

Briefly, the present invention provides polynucleotides isolated from eucalyptus and pine which encode enzymes involved in the synthesis of cell wall polysaccharides. Genetic constructs including such sequences and methods for the use of such constructs are also provided, together with transgenic plants having altered cell wall polysaccharide content and composition.

In one embodiment, the isolated polynucleotides comprise a nucleotide sequence selected from the group consisting of: (a) sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; (b) complements of the sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; (c) reverse complements of the sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; (d) reverse sequences of the sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; and (e) sequences having either 40%, 60%, 75% or 90% identical nucleotides, as defined herein, to a sequence of (a) – (d).

In a further aspect, isolated polypeptides encoded by a polynucleotide of the present invention are provided. In one embodiment, such polypeptides comprise an amino acid sequence selected from the group consisting of SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148, and variants thereof.

In another aspect, the invention provides genetic constructs comprising a polynucleotide of the present invention, either alone, in combination with one or more of the inventive polynucleotide sequences, or in combination with one or more known polynucleotides, together with transgenic cells comprising such constructs.

In a related aspect, the present invention provides genetic constructs comprising, in the 5'-3' direction, a gene promoter sequence; an open reading frame coding for at least a functional portion of an enzyme encoded by a polynucleotide of the present invention or a variant thereof; and a gene termination sequence. The open reading frame may be orientated in either a sense or antisense direction. Genetic constructs comprising a non-coding region of a gene coding for an enzyme encoded by the above polynucleotides or a nucleotide sequence complementary to a non-coding region, together with a gene promoter sequence and a gene termination sequence, are also provided. Preferably, the gene promoter and termination

sequences are functional in a host plant. Most preferably, the gene promoter and termination sequences are those of the original enzyme genes but others generally used in the art, such as the Cauliflower Mosaic Virus (CMV) promoter, with or without enhancers such as the Kozak sequence or Omega enhancer, and *Agrobacterium tumefaciens* nopal synthase terminator
5 may be usefully employed in the present invention. Tissue-specific promoters may be employed in order to target expression to one or more desired tissues. In a preferred embodiment, the gene promoter sequence provides for transcription in xylem. The genetic construct may further include a marker for the identification of transformed cells.

In a further aspect, transgenic plant cells comprising the genetic constructs of the
10 present invention are provided, together with plants comprising such transgenic cells, and fruits, seeds and other products, derivatives, or progeny of such forestry plants. Propagules of the transgenic plants transformed with the inventive polynucleotides are also included in the present invention. As used herein, the word "propagule" means any part of a plant that may be used in reproduction or propagation, sexual or asexual, including cuttings.

15 Plant varieties, particularly registrable plant varieties according to Plant Breeders' Rights, may be excluded from the present invention. A plant need not be considered a "plant variety" simply because it contains stably within its genome a transgene, introduced into a cell of the plant or an ancestor thereof.

In yet another aspect, methods for modulating the polysaccharide content and
20 composition of an organism, such as a plant, are provided, such methods including stably incorporating into the genome of the plant a genetic construct of the present invention. In a preferred embodiment, the target plant is a woody plant, preferably selected from the group consisting of eucalyptus, pine, acacia, poplar, sweetgum, teak and mahogany species, more preferably from the group consisting of pine and eucalyptus species, and most preferably from
25 the group consisting of *Eucalyptus grandis* and *Pinus radiata*. In a related aspect, a method for producing a plant having modified cellulose content is provided, the method comprising transforming a plant cell with a genetic construct of the present invention to provide a transgenic cell and cultivating the transgenic cell under conditions conducive to regeneration and mature plant growth.

30 In yet a further aspect, the present invention provides methods for modifying the activity of a polypeptide in a plant, comprising stably incorporating into the genome of the

plant a genetic construct of the present invention. In a preferred embodiment, the target plant is a woody plant, preferably selected from the group consisting of eucalyptus, pine, acacia, poplar, sweetgum, teak and mahogany species, more preferably from the group consisting of pine and eucalyptus species, and most preferably from the group consisting of *Eucalyptus grandis* and *Pinus radiata*.

The above-mentioned and additional features of the present invention and the manner of obtaining them will become apparent, and the invention will be best understood by reference to the following more detailed description. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

Brief Description of the Figures

Fig. 1 illustrates the level of native CEL enzyme activity in positive control mung bean (*V. radiata*) plants.

Fig. 2 illustrates the level of CEL enzyme activity in mammalian 293T cells transfected with *E. grandis* CEL as compared to that in non-transfected 293T cells.

Detailed Description

As outlined above, cellulose is formed by polymerization of glucose into a linear, unbranched, polymer comprised of β -1,4 linked glucose monomers (Kawagoe and Delmer, *Genetic Engineering*, 19:63-87, 1997). Cellulose is the most important plant cell wall polysaccharide from both a structural, as well as industrial, perspective. Other polysaccharides are essential for healthy cell walls, as well as for many alternative industrial uses.

Glucose monomers are most commonly stored in the plant in the form of amylose by the action of several enzymes, with the rate limiting step for storage being catalysed by AGP (Iglesias et al., *J. Biol. Chem.* 268:1081-1086). Glucose monomers are freed from this storage polymer by the action of the enzyme AMA. The free monomers are activated by the action of the enzyme UGP, and polymerised into cellulose macro-crystalline structures by the action of the cellulose synthase enzyme complex. Pure CEL enzyme has been shown to form β -1,4 glucose linkages *in vitro*, but has not been shown to be sufficient for polymerization of the

large polymers which are fundamental to the structure of plant cell walls. The holoenzyme complex appears to be necessary for this latter function. The holoenzyme is believed to be comprised of the CEL enzyme in combination with the SUS enzyme and ANX, the whole complex being integrated into the plasma membrane and forming a "rosette" structure as seen
5 in electron micrographs of plant cell membranes (Arioli et al., *Science* 279:717-720, 1998).

Because cellulose synthesis can represent such a large sink for sugar monomers in the cell, changes in the rate of cellulose synthesis can have a profound influence on the synthesis of other plant polysaccharides. Conversely, changes in the rates of synthesis of other plant polysaccharides can have a profound influence on the pool of sugars available for synthesis of
10 cellulose. Hence, changes in the synthesis of any single polymer may affect both the content and composition of plant cell wall polysaccharides, and polysaccharides in general.

Quantitative and qualitative modifications in plant polysaccharide content are known to be induced by external factors such as light stimulation, low calcium levels, and mechanical stress. Synthesis of cell wall polysaccharides can also be induced by infection
15 with pathogens.

Using the methods and materials of the present invention, the polysaccharide content of a plant may be increased or reduced, by incorporating additional copies of genes encoding enzymes involved in the synthesis of cell wall polysaccharides into the genome of the target plant. Similarly, an increase or decrease in polysaccharide content may be obtained by
20 transforming the target plant with antisense copies of such genes. In addition, the number of copies of genes encoding for different enzymes in the biosynthetic pathway of cell wall polysaccharides can be manipulated to modify the relative amount of each monosaccharide synthesized, thereby leading to the formation of cell walls having altered composition. The alteration of polysaccharide composition would be advantageous, for example, in tree
25 processing for paper.

The polynucleotides of the present invention were isolated from forestry plant sources, namely from *Eucalyptus grandis* and *Pinus radiata*, but they may alternatively be synthesized using conventional synthesis techniques. Specifically, isolated polynucleotides of the present invention include polynucleotides comprising a sequence selected from the group consisting
30 of sequences identified as SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; complements of the sequences identified as SEQ ID NOS: 1-29, 57-80, 105,

107, 109-113, 119-129, 139-143 and 149-908; reverse complements of the sequences identified as SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; at least a specified number of contiguous residues (x-mers) of any of the above-mentioned polynucleotides; extended sequences corresponding to any of the above polynucleotides; antisense sequences corresponding to any of the above polynucleotides; and variants of any of the above polynucleotides, as that term is described in this specification.

In another embodiment, the present invention provides isolated polypeptides encoded by the DNA sequences of SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908;. The predicted amino acid sequences encoded by SEQ ID NOS: 1-22, 24-28, 57-80, 105, 107, 109-113 and 119-143, based on the best available information at the time of filing this application, are provided in SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148, respectively. The present invention also encompasses polynucleotides that differ from the disclosed sequences but which, due to the degeneracy of the genetic code, encode a polypeptide which is the same as that encoded by a polypeptide of the present invention. Such polynucleotides are said to be "degeneratively equivalent" to a polynucleotide sequence disclosed herein.

The polynucleotides and polypeptides of the present invention were putatively identified by DNA and polypeptide similarity searches. In the attached Sequence Listing SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908 are polynucleotide sequences, and SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148 are polypeptide sequences. The polynucleotides and polypeptides of the present invention, have demonstrated similarity to enzymes that are known to be involved in the synthesis of cell wall polysaccharides. The putative identity of each of the inventive polynucleotides is shown below in Table 1.

TABLE 1

DNA SEQ ID NO:	PROTEIN SEQ ID NO:	IDENTITY
1	30	AGP
2	31	AGP
3	32	AGP
4	33	AMA

DNA SEQ ID NO:	PROTEIN SEQ ID NO:	IDENTITY
5	34	AMA
6	35	AMA
7	36	CEL
8	37	CEL
9	38	CEL
10	39	CEL
11	40	CEL
12	41	CEL
13	42	CEL
14	43	CEL
15	44	SUS
16	45	SUS
17	46	SUS
18	47	SUS
19	48	SUS
20	49	UGP
21	50	UGP
22	51	UGP
23	-	UGP
24	52	ANX
25	53	ANX
26	54	ANX
27	55	ANX
28	56	ANX
29	-	ANX
57	81	AMA
58	82	AMA
59	83	AGP
60	84	AGP
61	85	AGP
62	86	AGP
63	87	AGP
64	88	AGP
65	89	AGP
66	90	CEL
67	91	CEL
68	92	CEL
69	93	CEL
70	94	CEL
71	95	SUS
72	96	SUS
73	97	SUS
74	98	SUS
75	99	SUS
76	100	SUS
77	101	SUS
78	102	SUS
79	103	UGP
80	104	UGP

DNA SEQ ID NO:	PROTEIN SEQ ID NO:	IDENTITY
105	106	SUS
107	108	CEL
109	114	ANX
110	115	ANX
111	116	ANX
112	117	ANX
113	118	ANX
119	129	CEL
120	130	CEL
121	131	CEL
122	132	CEL
123	133	CEL
124	134	CEL
125	135	CEL
126	136	CEL
127	137	CEL
128	138	CEL
135	144	SUS
140	145	α -amylase
141	146	CEL
142	147	AGP (3' end of SEQ ID NO: 62)
143	148	SUS (3' of SEQ ID NO: 74)
149-185	-	1,3- β -D-Glucanase
186	-	1,4- β -Cellobiohydrolase
187-196	-	α , α -trehalose phosphate synthase
197-204	-	α -glucosidase
205-250	-	aldolase
251	-	Amylopectin 6-glucanohydrolase
252-262	-	β -amylase
263	-	β -glucosidase
264-272	-	Branching enzyme
273-318	-	D-fructokinase
319-354	-	D-xylulose reductase
355-365	-	Endo-1,3-1,4- β -glucanase
366-371	-	Glucan exo-1,3- β -glucosidase
372-377	-	Glucose 6-phosphate dehydrogenase
378-381	-	Glucose phosphate isomerase
382-389	-	Isoamylase
390-393	-	L-ribulokinase
394-398	-	Mannitol-1-phosphate 5-dehydrogenase
399-478	-	Pectin methyl-esterase
479-506	-	Phosphoglucomutase
507-508	-	Phospho-ribulokinase
509-521	-	Ribulose-phosphate-3-epimerase
522-530	-	Starch phosphorylase
531-551	-	Sucrose phosphate synthase
552-555	-	SUS
556-586	-	Transketolase
587-591	-	Trehalase

DNA SEQ ID NO:	PROTEIN SEQ ID NO:	IDENTITY
592-620	-	UDP-glucose 4-epimerase
621-902	-	Xyloglucan endotransglycosylase
903-908	-	Xylose isomerase

The term "polynucleotide(s)," as used herein, means a single or double-stranded polymer of deoxyribonucleotide or ribonucleotide bases and includes DNA and corresponding RNA molecules, including HnRNA and mRNA molecules, both sense and anti-sense strands, and comprehends cDNA, genomic DNA and recombinant DNA, as well as wholly or partially synthesized polynucleotides. An HnRNA molecule contains introns and corresponds to a DNA molecule in a generally one-to-one manner. An mRNA molecule corresponds to an HnRNA and DNA molecule from which the introns have been excised. A polynucleotide may consist of an entire gene, or any portion thereof. Operable anti-sense polynucleotides may comprise a fragment of the corresponding polynucleotide, and the definition of "polynucleotide" therefore includes all such operable anti-sense fragments.

The term "polypeptide", as used herein, encompasses amino acid chains of any length including full length proteins, wherein amino acid residues are linked by covalent peptide bonds. Polypeptides of the present invention may be naturally purified products, or may be produced partially or wholly using recombinant techniques.

The definition of the terms "complement", "reverse complement" and "reverse sequence", as used herein, is best illustrated by the following example. For the sequence 5' AGGACC 3', the complement, reverse complement and reverse sequence are as follows:

complement	3' TCCTGG 5'
reverse complement	3' GGTCCT 5'
reverse sequence	5' CCAGGA 3'.

As used herein, the term "variant" covers any sequence which has at least about 40%, more preferably at least about 60%, more preferably yet at least about 75% and most preferably at least about 90% identical residues (either nucleotides or amino acids) to a sequence of the present invention. The percentage of identical residues is determined by aligning the two sequences to be compared, determining the number of identical residues in

the aligned portion, dividing that number by the total length of the inventive, or queried, sequence and multiplying the result by 100.

Polynucleotide or polypeptide sequences may be aligned, and percentage of identical nucleotides in a specified region may be determined against another polynucleotide, using computer algorithms that are publicly available. Two exemplary algorithms for aligning and identifying the similarity of polynucleotide sequences are the BLASTN and FASTA algorithms. The similarity of polypeptide sequences may be examined using the BLASTP algorithm. Both the BLASTN and BLASTP software are available on the NCBI anonymous FTP server (<ftp://ncbi.nlm.nih.gov>) under /blast/executables/. The BLASTN algorithm Version 2.0.6 [Sept-16-1998], set to the default parameters described in the documentation and distributed with the algorithm, is preferred for use in the determination of variants according to the present invention. The use of the BLAST family of algorithms, including BLASTN and BLASTP, is described at NCBI's Internet website at the URL <http://www.ncbi.nlm.nih.gov/BLAST/newblast.html> and in the publication of Altschul, Stephen F, et al., "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs," *Nucleic Acids Res.* 25:3389-3402, 1997. The computer algorithm FASTA is available on the Internet at the ftp site <ftp://ftp.virginia.edu/pub/fasta/>. Version 2.04, [February 1996], set to the default parameters described in the documentation and distributed with the algorithm, is preferred for use in the determination of variants according to the present invention. The use of the FASTA algorithm is described in Pearson WR and Lipman DJ, "Improved Tools for Biological Sequence Analysis," *Proc. Natl. Acad. Sci. USA* 85:2444-2448, 1988; and Pearson WR, "Rapid and Sensitive Sequence Comparison with FASTP and FASTA," *Methods in Enzymol.* 183:63-98, 1990.

The following running parameters are preferred for determination of alignments and identities using BLASTN that contribute to the E values and percentage identity of polynucleotides of the present invention: Unix running command: blastall -p blastn -d embldb -e 10 -G 0 -E 0 -r 1 -v 30 -b 30 -i queryseq -o results; and the parameters are: -p Program Name [String]; -d Database [String]; -e Expectation value (E) [Real]; -G Cost to open a gap (zero invokes default behavior) [Integer]; -E Cost to extend a gap (zero invokes default behavior) [Integer]; -r Reward for a nucleotide match (blastn only) [Integer]; -v Number of

one-line descriptions (V) [Integer]; -b Number of alignments to show (B) [Integer]; -i Query File [File In]; -o BLAST report Output File [File Out] Optional.

The following running parameters are preferred for determination of alignments and identities using BLASTP that contribute to the E values and percentage identity of polypeptide sequences: For BLASTP the following running parameters are preferred: blastall -p blastp -d swissprot db -e 10 -G 0 -E 0 -v 30 -b 30 -i queryseq -o results; and parameters are: -p Program Name [String]; -d Database [String]; -e Expectation value (E) [Real]; -G Cost to open a gap (zero invokes default behavior) [Integer]; -E Cost to extend a gap (zero invokes default behavior) [Integer]; -v Number of one-line descriptions (v) [Integer]; -b Number of alignments to show (b) [Integer]; -I Query File [File In]; -o BLAST report Output File [File Out] Optional.

The "hits" to one or more database sequences by a queried sequence produced by BLASTN, BLASTP, FASTA, or a similar algorithm, align and identify similar portions of sequences. The hits are arranged in order of the degree of similarity and the length of sequence overlap. Hits to a database sequence generally represent an overlap over only a fraction of the sequence length of the queried sequence.

The BLASTN and FASTA algorithms also produce "Expect" values for alignments. The Expect value (E) indicates the number of hits one can "expect" to see over a certain number of contiguous sequences by chance when searching a database of a certain size. The Expect value is used as a significance threshold for determining whether the hit to a database, such as the preferred EMBL database, indicates true similarity. For example, an E value of 0.1 assigned to a hit is interpreted as meaning that in a database of the size of the EMBL database, one might expect to see 0.1 matches over the aligned portion of the sequence with a similar score simply by chance. By this criterion, the aligned and matched portions of the sequences then have a probability of 90% of being the same. For sequences having an E value of 0.01 or less over aligned and matched portions, the probability of finding a match by chance in the EMBL database is 1% or less using the BLASTN or FASTA algorithm.

According to one embodiment, "variant" polynucleotides, with reference to each of the polynucleotides of the present invention, preferably comprise sequences having the same number or fewer nucleic acids than each of the polynucleotides of the present invention and producing an E value of 0.01 or less when compared to the polynucleotide of the present

invention. That is, a variant polynucleotide is any sequence that has at least a 99% probability of being the same as the polynucleotide of the present invention, measured as having an E value of 0.01 or less using the BLASTN or FASTA algorithms set at the default parameters. According to a preferred embodiment, a variant polynucleotide is a sequence having the same
5 number or fewer nucleic acids than a polynucleotide of the present invention that has at least a 99% probability of being the same as the polynucleotide of the present invention, measured as having an E value of 0.01 or less using the BLASTN or FASTA algorithms set at the default parameters.

Alternatively, variant polynucleotide hybridize to the polynucleotide of the present
10 invention under stringent conditions. As used herein, "stringent conditions" refers to prewashing in a solution of 6X SSC, 0.2% SDS; hybridizing at 65°C, 6X SSC, 0.2% SDS overnight; followed by two washes of 30 minutes each in 1X SSC, 0.1% SDS at 65°C and two washes of 30 minutes each in 0.2X SSC, 0.1% SDS at 65°C.

The present invention also encompasses polynucleotides that differ from the disclosed
15 sequences but that, as a consequence of the discrepancy of the genetic code, encode a polypeptide having similar enzymatic activity as a polypeptide encoded by a polynucleotide of the present invention. Thus, polynucleotides comprising sequences that differ from the polynucleotide sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, or complements, reverse sequences, or reverse complements of those
20 sequences as a result of conservative substitutions are contemplated by and encompassed within the present invention. Additionally, polynucleotides comprising sequences that differ from the polynucleotide sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, or complements, reverse complements, or reverse sequences as a result of deletions and/or insertions totaling less than 10% of the total sequence length are
25 also contemplated by and encompassed within the present invention. Similarly, polypeptides comprising sequences that differ from the polypeptide sequences recited in SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148 as a result of amino acid substitutions, insertions, and/or deletions totaling less than 10% of the total sequence length are contemplated by an encompassed within the present invention, provided the variant
30 polypeptide has activity in a cell wall polysaccharide synthesis pathway.

5 Variants of the polypeptide sequences recited in SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148, wherein the variant has an activity level that is different to that of the recited polypeptide are also encompassed by the present invention. In specific embodiments, variants of the inventive sucrose synthase (SUS) polypeptides are provided wherein the N-terminal serine phosphorylation site has been replaced by an acidic amino acid (such as Asp or Glu) by, for example, site directed mutagenesis. Nakai et al. have demonstrated that SUS polypeptides mutated in this manner possess increased activity compared to wild-type SUS (Nakai et al., *Plant Cell Physiol.* 39:1337-1341, 1998). Polynucleotides encoding such variants of the inventive SUS polypeptides may therefore be employed in transgenic plants to increase cellulose production.

10 The polynucleotides of the present invention may be isolated from various libraries, or may be synthesized using techniques that are well known in the art. The polynucleotides may be synthesized, for example, using automated oligonucleotide synthesizers (e.g., Beckman Oligo 1000M DNA Synthesizer) to obtain polynucleotide segments of up to 50 or more nucleic acids. A plurality of such polynucleotide segments may then be ligated using standard DNA manipulation techniques that are well known in the art of molecular biology. One conventional and exemplary polynucleotide synthesis technique involves synthesis of a single stranded polynucleotide segment having, for example, 80 nucleic acids, and hybridizing that segment to a synthesized complementary 85 nucleic acid segment to produce a 5 nucleotide overhang. The next segment may then be synthesized in a similar fashion, with a 5 nucleotide overhang on the opposite strand. The "sticky" ends ensure proper ligation when the two portions are hybridized. In this way, a complete polynucleotide of the present invention may be synthesized entirely *in vitro*.

25 Some of the polynucleotides identified as SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908 are referred to as "partial" sequences, in that they do not represent the full coding portion of a gene encoding a naturally occurring polypeptide. The partial polynucleotide sequences disclosed herein may be employed to obtain the corresponding full length genes for various species and organisms by, for example, screening DNA expression libraries using hybridization probes based on the polynucleotides of the present invention, or using PCR amplification with primers based upon the polynucleotides of the present invention. In this way one can, using methods well known in the art, extend a

polynucleotide of the present invention upstream and downstream of the corresponding mRNA, as well as identify the corresponding genomic DNA, including the promoter and enhancer regions, of the complete gene. The present invention thus comprehends isolated polynucleotides comprising a sequence identified in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, or a variant of one of the specified sequences, that encode a functional polypeptide, including full length genes. Such extended polynucleotides may have a length of from about 50 to about 4,000 nucleic acids or base pairs, and preferably have a length of less than about 4,000 nucleic acids or base pairs, more preferably yet a length of less than about 3,000 nucleic acids or base pairs, more preferably yet a length of less than about 2,000 nucleic acids or base pairs. Under some circumstances, extended polynucleotides of the present invention may have a length of less than about 1,800 nucleic acids or base pairs, preferably less than about 1,600 nucleic acids or base pairs, more preferably less than about 1,400 nucleic acids or base pairs, more preferably yet less than about 1,200 nucleic acids or base pairs, and most preferably less than about 1,000 nucleic acids or base pairs.

Polynucleotides of the present invention also comprehend polynucleotides comprising at least a specified number of contiguous residues (x -mers) of any of the polynucleotides identified as SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, complements, reverse sequences, and reverse complements of such sequences, and their variants. Similarly, polypeptides of the present invention comprehend polypeptides comprising at least a specified number of contiguous residues (x -mers) of any of the polypeptides identified as SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148, and their variants. As used herein, the term " x -mer," with reference to a specific value of " x ," refers to a sequence comprising at least a specified number (" x ") of contiguous residues of any of the polynucleotides identified as SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, or the polypeptides identified as SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148. According to preferred embodiments, the value of x is preferably at least 20; more preferably, at least 40; more preferably yet, at least 60; and most preferably, at least 80. Thus, polynucleotides and polypeptides of the present invention comprise a 20-mer, a 40-mer, a 60-mer, an 80-mer, a 100-mer, a 120-mer, a 150-mer, a 180-mer, a 220-mer, a 250-mer, or a 300-mer, 400-mer,

500-mer or 600-mer of a polynucleotide or polypeptide identified as SEQ ID NOS: 1-908, and variants thereof.

Polynucleotide probes and primers complementary to and/or corresponding to SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, and variants of those sequences, are also comprehended by the present invention. Such oligonucleotide probes and primers are substantially complementary to the polynucleotide of interest. As used herein, the term "oligonucleotide" refers to a relatively short segment of a polynucleotide sequence, generally comprising between 6 and 60 nucleotides, and comprehends both probes for use in hybridization assays and primers for use in the amplification of DNA by polymerase chain reaction.

An oligonucleotide probe or primer is described as "corresponding to" a polynucleotide of the present invention, including one of the sequences set out as SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, or a variant, if the oligonucleotide probe or primer, or its complement, is contained within one of the sequences set out as SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908, or a variant of one of the specified sequences.

Two single stranded sequences are said to be substantially complementary when the nucleotides of one strand, optimally aligned and compared, with the appropriate nucleotide insertions and/or deletions, pair with at least 80%, preferably at least 90% to 95%, and more preferably at least 98% to 100%, of the nucleotides of the other strand. Alternatively, substantial complementarity exists when a first DNA strand will selectively hybridize to a second DNA strand under stringent hybridization conditions. Stringent hybridization conditions for determining complementarity include salt conditions of less than about 1 M, more usually less than about 500 mM, and preferably less than about 200 mM. Hybridization temperatures can be as low as 5°C, but are generally greater than about 22°C, more preferably greater than about 30°C, and most preferably greater than about 37°C. Longer DNA fragments may require higher hybridization temperatures for specific hybridization. Since the stringency of hybridization may be affected by other factors such as probe composition, presence of organic solvents and extent of base mismatching, the combination of parameters is more important than the absolute measure of any one alone. The DNA from plants or

samples or products containing plant material can be either genomic DNA or DNA derived by preparing cDNA from the RNA present in the sample.

In addition to DNA-DNA hybridization, DNA-RNA or RNA-RNA hybridization assays are also possible. In the first case, the mRNA from expressed genes would then be
5 detected instead of genomic DNA or cDNA derived from mRNA of the sample. In the second case, RNA probes could be used. In addition, artificial analogs of DNA hybridizing specifically to target sequences could also be used.

In specific embodiments, the oligonucleotide probes and/or primers comprise at least about 6 contiguous residues, more preferably at least about 10 contiguous residues, and most
10 preferably at least about 20 contiguous residues complementary to a polynucleotide sequence of the present invention. Probes and primers of the present invention may be from about 8 to 100 base pairs in length or, preferably from about 10 to 50 base pairs in length or, more preferably from about 15 to 40 base pairs in length. The probes can be easily selected using procedures well known in the art, taking into account DNA-DNA hybridization stringencies,
15 annealing and melting temperatures, and potential for formation of loops and other factors, which are well known in the art. Tools and software suitable for designing probes, and especially suitable for designing PCR primers, are available on the Internet, for example, at URL <http://www.horizonpress.com/pcr/>. Preferred techniques for designing PCR primers are also disclosed in Dieffenbach CW and Dykster GS, *PCR primer: a laboratory manual*,
20 CSHL Press: Cold Spring Harbor, NY, 1995.

A plurality of oligonucleotide probes or primers corresponding to a polynucleotide of the present invention may be provided in a kit form. Such kits generally comprise multiple DNA or oligonucleotide probes, each probe being specific for a polynucleotide sequence. Kits of the present invention may comprise one or more probes or primers corresponding to
25 polynucleotide of the present invention, including a polynucleotide sequence identified in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908.

In one embodiment, the present invention provides genetic that include an open reading frame coding for at least a functional portion of a polypeptide encoded by a polynucleotide of the present invention or a variant thereof. As used herein, the "functional
30 portion" of a polypeptide is that portion which contains the active site essential for affecting the metabolic step, *i.e.*, the portion of the molecule that is capable of binding one or more

reactants or is capable of improving or regulating the rate of reaction. The functional portion can be determined by targeted mutagenesis and screening of modified protein products with protocols well known in the art. Normally, the functional portion is 10-20 amino acids, but can be shorter or longer. The active site may be made up of separate portions present on one or more polypeptide chains and will generally exhibit high substrate specificity. The term "polypeptide encoded by a polynucleotide" as used herein, includes polypeptides encoded by a nucleotide sequence which includes the partial isolated DNA sequences of the present invention.

The open reading frame may be inserted in the genetic construct in a sense or antisense orientation, such that transformation of a target plant with the genetic construct will produce a change in the amount or structure of the polypeptide compared to the wild-type plant. Transformation with a genetic construct comprising an open reading frame in a sense orientation will generally result in modified expression of the selected gene, while transformation with a genetic construct comprising an open reading frame in an antisense orientation also generally results in modified expression of the selected gene. A population of plants transformed with a genetic construct comprising an open reading frame of the present invention in either a sense or antisense orientation may be screened for increased or reduced expression of the gene in question using techniques well known to those of skill in the art, and plants having the desired phenotypes may thus be isolated.

Alternatively, expression of a gene involved in the biosynthesis of polysaccharides may be inhibited by inserting a portion of an open reading frame of the present invention, in either sense or antisense orientation, in the genetic construct. Such portions need not be full-length but preferably comprise at least 25 and more preferably at least 50 residues of a polynucleotide of the present invention. A much longer portion or even the full length polynucleotide corresponding to the complete open reading frame may be employed. The portion of the open reading frame does not need to be precisely the same as the endogenous sequence, provided that there is sufficient sequence similarity to achieve inhibition of the target gene. Thus a sequence derived from one species may be used to inhibit expression of a gene in a different species.

In a second embodiment, the inventive genetic constructs comprise a polynucleotide including a non-coding region of a gene coding for a polypeptide encoded by a polynucleotide

of the present invention, or a polynucleotide sequence complementary to such a non-coding region. Examples of non-coding regions which may be usefully employed in such constructs include introns and 5'-non-coding leader sequences. Transformation of a target plant with such a genetic construct may lead to a reduction in the amount of polysaccharide synthesized by the plant by the process of co-suppression, in a manner similar to that discussed, for example, by Napoli et al. (*Plant Cell* 2:279-290, 1990) and de Carvalho Niebel et al. (*Plant Cell* 7:347-358, 1995).

Alternatively, regulation of polysaccharide synthesis can be achieved by inserting appropriate sequences or subsequences (e.g., DNA or RNA) in ribozyme constructs (McIntyre CL, Manners JM, *Transgenic Res.* 5(4):257-262, 1996). Ribozymes are synthetic RNA molecules that comprise a hybridizing region complementary to two regions, each of which comprises at least 5 contiguous nucleotides in a mRNA molecule encoded by one of the inventive polynucleotides. Ribozymes possess highly specific endonuclease activity, which autocatalytically cleaves the mRNA.

The genetic constructs of the present invention further comprise a gene promoter sequence and a gene termination sequence, operably linked to the DNA sequence to be transcribed, which control expression of the gene. The gene promoter sequence is generally positioned at the 5' end of the DNA sequence to be transcribed, and is employed to initiate transcription of the DNA sequence. Gene promoter sequences are generally found in the 5' non-coding region of a gene but they may exist downstream of the open reading frame, in introns (Luehrsen KR, *Mol. Gen. Genet.* 225:81-93, 1991) or in the coding region, as for example in a plant defence gene (Douglas et al., *EMBO J.* 10:1767-1775, 1991). When the construct includes an open reading frame in a sense orientation, the gene promoter sequence also initiates translation of the open reading frame. For DNA constructs comprising either an open reading frame in an antisense orientation or a non-coding region, the gene promoter sequence consists only of a transcription initiation site having a RNA polymerase binding site.

A variety of gene promoter sequences which may be usefully employed in the DNA constructs of the present invention are well known in the art. The gene promoter sequence, and also the gene termination sequence, may be endogenous to the target plant host or may be exogenous, provided the promoter is functional in the target host. For example, the promoter and termination sequences may be from other plant species, plant viruses, bacterial plasmids,

and the like. Preferably, gene promoter and termination sequences are from the inventive sequences themselves.

Factors influencing the choice of promoter include the desired tissue specificity of the construct, and the timing of transcription and translation. For example, constitutive promoters, such as the 35S Cauliflower Mosaic Virus (CaMV 35S) promoter, will affect the activity of the enzyme in all parts of the plant. Use of a tissue specific promoter will result in production of the desired sense or antisense RNA only in the tissue of interest. With genetic constructs employing inducible gene promoter sequences, the rate of RNA polymerase binding and initiation can be modulated by external stimuli, such as light, heat, anaerobic stress, alteration in nutrient conditions and the like. Temporally regulated promoters can be employed to effect modulation of the rate of RNA polymerase binding and initiation at a specific time during development of a transformed cell. Preferably, the original promoters from the enzyme gene in question, or promoters from a specific tissue-targeted gene in the organism to be transformed, such as eucalyptus or pine are used. Other examples of gene promoters which may be usefully employed in the present invention include mannopine synthase (mas), octopine synthase (ocs), and those reviewed by Chua et al. (*Science* 244:174-181, 1989).

The gene termination sequence, which is located 3' to the DNA sequence to be transcribed, may come from the same gene as the gene promoter sequence or may be from a different gene. Many gene termination sequences known in the art may be usefully employed in the present invention, such as the 3' end of the *Agrobacterium tumefaciens* nopaline synthase gene. However, preferred gene terminator sequences are those from the original enzyme gene or from the target species to be transformed.

The genetic constructs of the present invention may also contain a selection marker that is effective in plant cells, to allow for the detection of transformed cells containing the inventive construct. Such markers, which are well known in the art, typically confer resistance to one or more toxins. One example of such a marker is the NPTII gene whose expression results in resistance to kanamycin or hygromycin, antibiotics which are usually toxic to plant cells at a moderate concentration (Rogers et al., in Weissbach, A and H, eds., *Methods for Plant Molecular Biology*, Academic Press Inc.: San Diego, CA, 1988). Transformed cells can thus be identified by their ability to grow in media containing the

antibiotic in question. Alternatively, the presence of the desired construct in transformed cells can be determined by means of other techniques well known in the art, such as Southern and Western blots.

A transcription initiation site is additionally included in the genetic construct when the sequence to be transcribed lacks such a site.

Techniques for operatively linking the components of the inventive genetic constructs are well known in the art and include the use of synthetic linkers containing one or more restriction endonuclease sites as described, for example, by Sambrook et al. (*Molecular cloning: a laboratory manual*, CSHL Press: Cold Spring Harbor, NY, 1989). The genetic construct of the present invention may be linked to a vector having at least one replication system, for example *E. coli*, whereby after each manipulation, the resulting construct can be cloned and sequenced and the correctness of the manipulation determined.

The genetic constructs of the present invention may be used to transform a variety of plants, both monocotyledonous (e.g., grasses, corn, grains, oat, wheat and barley), dicotyledonous (e.g., *Arabidopsis*, tobacco, legumes, alfalfa, oaks, eucalyptus, maple), and Gymnosperms (e.g., Scots pine; see Aronen, *Finnish Forest Res. Papers*, Vol. 595, 1996), white spruce (Ellis et al., *Biotechnology* 11:84-89, 1993), and larch (Huang et al., *In Vitro Cell* 27:201-207, 1991). In a preferred embodiment, the inventive genetic constructs are employed to transform woody plants, herein defined as a tree or shrub whose stem lives for a number of years and increases in diameter each year by the addition of woody tissue. Preferably the target plant is selected from the group consisting of eucalyptus and pine species, most preferably from the group consisting of *Eucalyptus grandis* and *Pinus radiata*. Other species which may be usefully transformed with the DNA constructs of the present invention include, but are not limited to: pines such as *Pinus banksiana*, *Pinus brutia*, *Pinus caribaea*, *Pinus clausa*, *Pinus contorta*, *Pinus coulteri*, *Pinus echinata*, *Pinus eldarica*, *Pinus ellioti*, *Pinus jeffreyi*, *Pinus lambertiana*, *Pinus monticola*, *Pinus nigra*, *Pinus palustris*, *Pinus pinaster*, *Pinus ponderosa*, *Pinus resinosa*, *Pinus rigida*, *Pinus serotina*, *Pinus strobus*, *Pinus sylvestris*, *Pinus taeda*, *Pinus virginiana*; other gymnosperms, such as *Abies amabilis*, *Abies balsamea*, *Abies concolor*, *Abies grandis*, *Abies lasiocarpa*, *Abies magnifica*, *Abies procera*, *Chamaecyparis lawsoniana*, *Chamaecyparis nootkatensis*, *Chamaecyparis thyoides*, *Huniperus virginiana*, *Larix decidua*, *Larix laricina*, *Larix leptolepis*, *Larix occidentalis*,

Larix siberica, *Libocedrus decurrens*, *Picea abies*, *Picea engelmanni*, *Picea glauca*, *Picea mariana*, *Picea pungens*, *Picea rubens*, *Picea sitchensis*, *Pseudotsuga menziesii*, *Sequoia gigantea*, *Sequoia sempervirens*, *Taxodium distichum*, *Tsuga canadensis*, *Tsuga heterophylla*, *Tsuga mertensiana*, *Thuja occidentalis*, *Thuja plicata*; and Eucalypts, such as *Eucalyptus* *alba*, *Eucalyptus bancroftii*, *Eucalyptus botyroides*, *Eucalyptus bridgesiana*, *Eucalyptus calophylla*, *Eucalyptus camaldulensis*, *Eucalyptus citriodora*, *Eucalyptus cladocalyx*, *Eucalyptus coccifera*, *Eucalyptus curtisii*, *Eucalyptus dalrympleana*, *Eucalyptus deglupta*, *Eucalyptus delagatensis*, *Eucalyptus diversicolor*, *Eucalyptus dunnii*, *Eucalyptus ficifolia*, *Eucalyptus globulus*, *Eucalyptus gomphocephala*, *Eucalyptus gunnii*, *Eucalyptus henryi*, *Eucalyptus laevopinea*, *Eucalyptus macarthurii*, *Eucalyptus macrorhyncha*, *Eucalyptus maculata*, *Eucalyptus marginata*, *Eucalyptus megacarpa*, *Eucalyptus melliodora*, *Eucalyptus nicholii*, *Eucalyptus nitens*, *Eucalyptus nova-anglica*, *Eucalyptus obliqua*, *Eucalyptus obtusiflora*, *Eucalyptus oreades*, *Eucalyptus pauciflora*, *Eucalyptus polybractea*, *Eucalyptus regnans*, *Eucalyptus resinifera*, *Eucalyptus robusta*, *Eucalyptus rudis*, *Eucalyptus saligna*, *Eucalyptus sideroxylon*, *Eucalyptus stuartiana*, *Eucalyptus tereticornis*, *Eucalyptus torelliana*, *Eucalyptus urnigera*, *Eucalyptus urophylla*, *Eucalyptus viminalis*, *Eucalyptus viridis*, *Eucalyptus wandoo* and *Eucalyptus youmanni*; together with hybrids of the above species.

As discussed above, transformation of a plant with a genetic construct of the present invention will result in a modification in polysaccharide synthesis in the plant. For example, an increase in the production of cellulose in a plant may be obtained by introducing a genetic construct comprising an open reading frame encoding the enzyme CEL in a sense orientation. Similarly, transformation of a plant with a genetic construct comprising either an open reading frame encoding CEL in an antisense orientation or a non-coding (untranslated) region of a CEL gene will lead to a reduction in the cellulose content of the transformed plant.

Techniques for stably incorporating genetic constructs into the genome of target plants are well known in the art and include *Agrobacterium tumefaciens* mediated introduction, electroporation, protoplast fusion, injection into reproductive organs, injection into immature embryos, high velocity projectile introduction and the like. The choice of technique will depend upon the target plant to be transformed. For example, dicotyledonous plants and certain monocots and gymnosperms may be transformed by *Agrobacterium* Ti plasmid

technology, as described, for example by Bevan (*Nucleic Acids Res.* 12:8711-8721, 1984). Targets for the introduction of the genetic constructs of the present invention include tissues, such as leaf tissue, disseminated cells, protoplasts, seeds, embryos, meristematic regions; cotyledons, hypocotyls, and the like. The preferred method for transforming eucalyptus and pine is a biolistic method using pollen (*see, for example, Aronen, Finnish Forest Res. Papers,* 5 595:53, 1996) or easily regenerable embryonic tissues.

Once the cells are transformed, cells having the inventive genetic construct incorporated in their genome may be selected by means of a marker, such as the kanamycin resistance marker discussed above. Transgenic cells may then be cultured in an appropriate medium to regenerate whole plants, using techniques well known in the art. In the case of protoplasts, the cell wall is allowed to reform under appropriate osmotic conditions. In the case of seeds or embryos, an appropriate germination or callus initiation medium is employed. For explants, an appropriate regeneration medium is used. Regeneration of plants is well established for many species. For a review of regeneration of forest trees, *see Dunstan et al.,* 10 "Somatic embryogenesis in woody plants," in Thorpe TA, ed., *In vitro embryogenesis of plants*, (Current Plant Science and Biotechnology in Agriculture), Vol. 20, Chapter 12, pp. 471-540, 1995. Specific protocols for the regeneration of spruce are discussed by Roberts et al., ("Somatic embryogenesis of spruce," in Redenbaugh K, ed., *Synseed: applications of synthetic seed to crop improvement*, Chapter 23, pp. 427-449, CRC Press: [n.p.], 1993). The 15 resulting transformed plants may be reproduced sexually or asexually, using methods well known in the art, to give successive generations of transgenic plants.

As discussed above, the production of RNA in target plant cells can be controlled by choice of the promoter sequence, or by selecting the number of functional copies or the site of integration of the polynucleotides incorporated into the genome of the target plant host. A target plant may be transformed with more than one genetic construct of the present invention, thereby modulating the activity of more than one cell wall polysaccharide enzyme, affecting enzyme activity in more than one tissue, or affecting enzyme activity at more than one expression time. Similarly, a genetic construct may be assembled containing more than one open reading frame coding for a polypeptide encoded by a polynucleotide of the present invention or more than one non-coding region of a gene coding for such a polypeptide. The 25 polynucleotides of the present inventive may also be employed in combination with other

known sequences encoding polypeptides involved in the synthesis of cell wall polysaccharides. In this manner, it may be possible to modify a biosynthetic pathway of cell wall polysaccharides in a non-woody plant to produce a new type of woody plant.

5 The following examples are offered by way of illustration and not by way of limitation.

Example 1

Isolation and Characterization of cDNA Clones from *Eucalyptus grandis*

10 *Eucalyptus grandis* cDNA expression libraries (from various tissues, including flowers, leaves, phloem, roots, seeds, shoot buds and xylem) were constructed and screened as follows.

mRNA was extracted from the plant tissue using the protocol of Chang et al. (*Plant Molecular Biology Reporter* 11:113-116, 1993) with minor modifications. Specifically, samples were dissolved in CPC-RNAXB (100 mM Tris-Cl, pH 8.0; 25 mM EDTA; 2.0 M NaCl; 2%CTAB; 2% PVP and 0.05% Spermidine*3HCl) and extracted with chloroform:isoamyl alcohol, 24:1. mRNA was precipitated with ethanol and the total RNA preparate was purified using a Poly(A) Quik mRNA Isolation Kit (Stratagene, La Jolla, CA). A cDNA expression library was constructed from the purified mRNA by reverse transcriptase synthesis followed by insertion of the resulting cDNA clones in Lambda ZAP using a ZAP Express cDNA Synthesis Kit (Stratagene), according to the manufacturer's protocol. The resulting cDNAs were packaged using a Gigapack II Packaging Extract (Stratagene) employing 1 µl of sample DNA from the 5 µl ligation mix. Mass excision of the library was done using XL1-Blue MRF' cells and XL0LR cells (Stratagene) with ExAssist helper phage (Stratagene). The excised phagemids were diluted with NZY broth (Gibco BRL, Gaithersburg, MD) and plated out onto LB-kanamycin agar plates containing X-gal and isopropylthio-beta-galactoside (IPTG).

25 Of the colonies plated and picked for DNA miniprep, 99% contained an insert suitable for sequencing. Positive colonies were cultured in NZY broth with kanamycin and cDNA was purified by means of alkaline lysis and polyethylene glycol (PEG) precipitation. Agarose gel at 1% was used to screen sequencing templates for chromosomal contamination. Dye primer

30

sequences were prepared using a Turbo Catalyst 800 machine (Perkin Elmer/Applied Biosystems Division, Foster City, CA) according to the manufacturer's protocol.

DNA sequences for positive clones were obtained using a Perkin Elmer/Applied Biosystems Division Prism 377 sequencer. cDNA clones were sequenced first from the 5' end and, in some cases, also from the 3' end. For some clones, internal sequence was obtained using subcloned fragments. Subcloning was performed using standard procedures of restriction mapping and subcloning to pBluescript II SK+ vector.

The determined cDNA sequences are provided in SEQ ID NO: 2, 3, 6, 7, 9, 12-15, 18, 19, 21, 23, 26, 28, 29, 57, 58, 60-66, 71-73, 78, 79, 105, 107, 119-128, 139, 141, 142, 149-161, 186-195, 197, 198, 205-233, 252-256, 264, 273-293, 319-330, 366, 373-377, 382-385, 390-393, 399-434, 479-503, 507-512, 522-528, 531-547, 552-554, 556-573, 587-589, 592-612 and 621-771.

Example 2

Isolation and Characterization of cDNA Clones from *Pinus radiata*

Isolation of cDNA clones by high through-put screening

Pinus radiata cDNA expression libraries (from various tissues, including cell cultures, fascicle meristems, phloem, pollen sacs, roots, seedlings, shoot buds, strobilus and xylem) were constructed and screened as described above in Example 1. DNA sequence for positive clones was obtained using forward and reverse primers on a Perkin Elmer/Applied Biosystems Division Prism 377 sequencer. The determined cDNA sequences are provided in SEQ ID NO: 1, 4, 5, 8, 10, 11, 16, 17, 20, 22, 24, 25, 27, 59, 67-70, 74-77, 80, 109-113, 140, 143, 162-185, 196, 199-204, 234-251, 257-263, 265-272, 294-318, 331-365, 367-372, 378-381, 386-389, 394-398, 435-481, 504-506, 513-521, 529, 530, 548-551, 555, 574-586, 590, 591, 613-620 and 772-908.

Example 3

Polynucleotide and Amino Acid Analysis

The determined cDNA sequences described above were compared to and aligned with known sequences in the EMBL database (as updated to May 1999). Specifically, the

polynucleotides identified in SEQ ID NO: 1-29, 57-80, 105, 107, 109-111, 115-125, 135-139 and 145-904 were compared to polynucleotides in the EMBL database using the BLASTN algorithm Version 2.0.6 [Sep-16-1998] set to the following running parameters: Unix running command: blastall -p blastn -d embldb -e 10 -G0 -E0 -r1 -v30 -b30 -i queryseq -o results.

5 Multiple alignments of redundant sequences were used to build up reliable consensus sequences. Based on similarity to known sequences from other plant or non-plant species, the isolated polynucleotides of the present invention identified as SEQ ID NO: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908 were putatively identified as encoding the enzymes shown in Table 1, above.

10 The cDNA sequences of SEQ ID NO: 58, 60, 62, 64, 65, 67-70, 72, 74, 75, 77, 78, 80, 105, 107, 119-121, 123-128 and 139-143 were determined to have less than 40% identity to sequences in the EMBL database using the computer algorithm BLASTN, as described above. The cDNA sequences of SEQ ID NO: 57, 59, 66, 79 and 122 were determined to have less than 60% identity to sequences in the EMBL database using BLASTN, as described above.

15 The cDNA sequences of SEQ ID NO: 61, 71, 73 and 76 were determined to have less than 75% identity to sequences in the EMBL database using BLASTN, as described above. The cDNA sequence of SEQ ID NO: 63 was determined to have less than 90% identity to sequences in the EMBL database using BLASTN, as described above.

20

Example 4

Functional Identification of Cellulose Biosynthetic Genes

Sense constructs containing sequences including the coding regions for UGP (SEQ ID NO: 23) and SUS (SEQ ID NO: 49) from *Eucalyptus grandis*, and UGP (SEQ ID NO: 24) from *Pinus radiata* were inserted into the expression vector pET16b (Clontech Laboratories Inc, Palo Alto, CA). The resulting constructs were transformed into *E. coli* XL1-Blue (Stratagene) and induced to produce recombinant protein by the addition of IPTG. Purified proteins were obtained using Ni²⁺ column chromatography (Janknecht et al., *Proc. Natl. Acad. Sci. USA*, 88:8972-8976, 1991). Enzyme assays for each of the purified proteins demonstrated the expected substrate specificity and enzymatic activity for the genes tested.

30 Enzyme assays for UGP were performed using published methods (Peng and Chang, *FEBS Lett.* 329[1,2]:153-158, 1993). The data shown in Table 2 demonstrates enzyme

activity for the expressed proteins as compared to data from Katsube et al. (*Biochem.* 30:8546-8551, 1991) and Nakano et al. (*J. Biochem.* 106:528-532, 1989).

TABLE 2

5

SEQ ID NO:	24	23	Katsube et al.	Nakano et al.
Species	<i>P. radiata</i>	<i>E. grandis</i>	<i>S. tuberosum</i>	<i>S. tuberosum</i>
Enzyme	UGP	UGP	UGP	UGP
K_M^{GIP}	0.121	0.126	0.130	0.180
SEM	0.020	0.002	n.a.	n.a.
K_M^{UTP}	0.091	not done	0.076	0.170
SEM	0.015	not done	n.a.	n.a.
K_M^{ATP}	no activity	no activity	no activity	no activity

Enzyme assays for SUS (sucrose synthase) were performed using the methods described by Šebková, V. et al. (*Plant Physiol.*, 108:75-83, 1995). The data shown in Table 3 demonstrates enzyme activity for the expressed proteins. The $K_M^{Sucrose}$ of *E. grandis* is compared with the data reported by Delmer DP (*J. Biol. Chem.* 247:3822-3828, 1972) and Nakai et al. (*BioSci. Biotech. Biochem.* 61:1500-1503).

TABLE 3

SEQ ID NO:	49	Delmer et al.	Nakai et al.
Species	<i>E. grandis</i>	<i>V. radiata</i>	<i>V. radiata</i>
Enzyme	SUS	SUS	SUS
$K_M^{Sucrose}$	1.651	16.700	161.000
SEM	0.371	n.a.	n.a.
K_M^{UDP}	0.028	n.a.	n.a.
SEM	0.003	n.a.	n.a.

A sense construct containing the sequence of the coding region for cellulose synthase (CEL; SEQ ID NO: 50) from *Eucalyptus grandis* was inserted into the protein expression vector pcDNA3 (Invitrogen, Carlsbad, CA). The resulting construct was transfected into mammalian 293T cells (DuBridge RB et al., *Mol. Cell. Biol.* 7[1]:379-387, 1987), and recombinant protein was induced by the addition of IPTG. Proteins were solubilised from membranes, and the level of CEL activity was determined as described by Kudlicka K and Brown RM Jr. (*Plant Phys.* 115:643-656, 1997). As a positive control for activity, native CEL enzyme was solubilised from mung bean (*Vigna radiata*) plants. The determined levels of CEL activity for *V. radiata* are shown in Fig. 1. The levels of CEL activity found in mammalian 293T cells transfected with the *Eucalyptus* CEL expression clone were found to be similar to those obtained from *V. radiata* (Fig. 2). CEL activity was absent in non-transfected control 293T cells.

Example 5

Use of a Cellulose Synthase (CEL) Gene to Modify Polysaccharide Biosynthesis

Transformation of tobacco plants with a *Pinus radiata* CEL gene is performed as follows. Genetic constructs comprising sense and anti-sense constructs containing a polynucleotide including the coding region of CEL (SEQ ID NO: 8) from *Pinus radiata* are constructed and inserted into *Agrobacterium tumefaciens* by direct transformation using published methods (See, An G, Ebert PR, Mitra A, Ha SB, "Binary Vectors," in Gelvin SB and Schilperoort RA, eds., *Plant Molecular Biology Manual*, Kluwer Academic Publishers: Dordrecht, 1988). The constructs of sense polynucleotides are made by cloning PBK-CMV plasmid cDNA inserts into pART7 plasmids, followed by cloning of the *NotI*-digested 35S-Insert-OCS 3'UTR-fragments from the pART7 vectors into pART27 plant expression vectors (See Gleave A, "A versatile binary vector system with a T-DNA organizational structure conducive to efficient integration of cloned DNA into the plant genome," *Plant Molecular Biology* 20:1203-1207, 1992). The presence and integrity of the transgenic constructs are verified by restriction digestion and DNA sequencing.

Tobacco (*Nicotiana tabacum* cv. Samsun) leaf sections are transformed with the sense and anti-sense CEL constructs using the method of Horsch et al. (*Science* 227:1229-1231,

1985). Transformed plants containing the appropriate CEL construct are verified using Southern blot experiments. Expression of *Pinus* CEL in transformed plants is confirmed by isolating total RNA from each independent transformed plant line created with the CEL sense and anti-sense constructs. The RNA samples are analysed in Northern blot experiments to
5 determine the level of expression of the transgene in each transformed line.

The total activity of CEL enzyme, encoded by the *Pinus* CEL gene and by the endogenous tobacco CEL gene, is analysed for each transformed plant line created with the CEL sense and anti-sense constructs. Crude protein extracts are prepared from each transformed plant and assayed using the methods of Robertson et al. (*Biochem J.*
10 306:745-750, 1995) and Pear et al. (*Proc. Natl. Acad. Sci. USA* 93:12637-12642, 1996).

The concentration of cellulose in the transformed tobacco plants is determined using the method of Smith and Harris (*Plant Phys.* 107:1399-1409, 1995). Briefly, whole tobacco plants, of an average age of 38 days, are frozen in liquid nitrogen and ground to a fine powder in a mortar and pestle. The cellulose content of 100 mg of frozen powder from an empty
15 vector-transformed control plant line, at least one independent transformed plant line containing the sense construct for CEL and at least one independent transformed plant lines containing the anti-sense construct for CEL are determined using a glucan estimation kit from Megazyme (Warriewood, New South Wales, Australia) using the protocols supplied by the manufacturer.

20 SEQ ID NOS: 1-908 are set out in the attached Sequence Listing. The codes for nucleotide and amino acid sequences used in the attached Sequence Listing, including the symbols "n" and "Xaa", conform to WIPO Standard ST.25 (1998), Appendix 2, Table 1.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, changes and modifications
25 can be carried out without departing from the scope of the invention which is intended to be limited only by the scope of the claims.

Claims:

1. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of: (1) sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; (2) complements of the sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; (3) reverse complements of the sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; (4) reverse sequences of the sequences recited in SEQ ID NOS: 1-29, 57-80, 105, 107, 109-113, 119-129, 139-143 and 149-908; (5) nucleotide sequences producing an Expectation ("E") value of 0.01 or less when compared to a sequence recited in (1) – (4) above; (6) nucleotide sequences having at least 50% identity to a nucleotide sequence recited in (1) – (4) above; (7) nucleotide sequences that hybridize to a sequence recited in (1) – (4) above under stringent hybridization conditions; (8) nucleotide sequences that are 200-mers of a sequence recited in (1) – (4) above; (9) nucleotide sequences that are 100-mers of a sequence recited in (1) – (4) above; (10) nucleotide sequences that are 40-mers of a sequence recited in (1) – (4) above; (11) nucleotide sequences that are 20-mers of a sequence recited in (1) – (4) above; (12) nucleotide sequences that are degeneratively equivalent to a sequence recited in (1) – (4) above; and (13) nucleotide sequences that are allelic variants of a sequence recited in (1) – (4) above.
2. An isolated oligonucleotide probe or primer comprising at least 10 contiguous residues complementary to 10 contiguous residues of a nucleotide sequence recited in claim 1.
3. A kit comprising a plurality of oligonucleotide probes or primers of claim 2.
4. A storage medium having recorded thereon a plurality of polynucleotides, at least one of the polynucleotides comprising a nucleotide sequence recited in claims 1 or 2.
5. A construct comprising a polynucleotide of claim 1.
6. A transgenic cell comprising a construct according to claim 5.
7. A construct comprising, in the 5'-3' direction:
 - (a) a gene promoter sequence;
 - (b) a polynucleotide sequence comprising at least one of the following: (1) a polynucleotide coding for at least a functional portion of a polypeptide

encoded by a nucleotide sequence of claim 1; and (2) a polynucleotide comprising a non-coding region of a gene coding for a polypeptide encoded by a nucleotide sequence selected from the group consisting of sequences recited in claim 1; and

- 5 (c) a gene termination sequence.
8. The construct of claim 7, wherein the polynucleotide is in a sense orientation.
9. The construct of claim 7, wherein the polynucleotide is in an antisense orientation.
10. The construct of claim 7, wherein the gene promoter sequence is functional in a plant host to provide for transcription in xylem.
- 10 11. A transgenic plant cell comprising a construct of claim 7.
12. A plant comprising a transgenic plant cell according to claim 11, or a part or propagule or progeny thereof.
13. A method for modulating one or more of the polysaccharide content, the polysaccharide composition and the polysaccharide structure of a plant, comprising
- 15 stably incorporating into the genome of the plant a polynucleotide of claim 1.
14. The method of claim 13 wherein the plant is selected from the group consisting of eucalyptus and pine species.
15. The method of claim 13 comprising stably incorporating into the genome of the plant a construct of claim 7.
- 20 16. A method for producing a plant having one or more of altered polysaccharide content, altered polysaccharide composition and altered polysaccharide structure, comprising:
- (a) transforming a plant cell with a construct of claim 7 to provide a transgenic cell; and
- (b) cultivating the transgenic cell under conditions conducive to regeneration and
- 25 mature plant growth.
17. A method for modifying the activity of a polypeptide involved in a polysaccharide biosynthetic pathway in a plant comprising stably incorporating into the genome of the plant a construct of claim 7.
18. An isolated polypeptide comprising an amino acid sequence selected from the group
- 30 consisting of: (a) sequences of SEQ ID NOS: 30-56, 81-104, 106, 108, 114-118, 129-138 and 144-148; (b) sequences having at least 50% identity to a sequence of (a);

sequences having at least 70% identity to a sequence of (a); and sequences having at least 90% identity to a sequence of (a).

19. An isolated polypeptide encoded by an isolated polynucleotide sequence of claim 1.

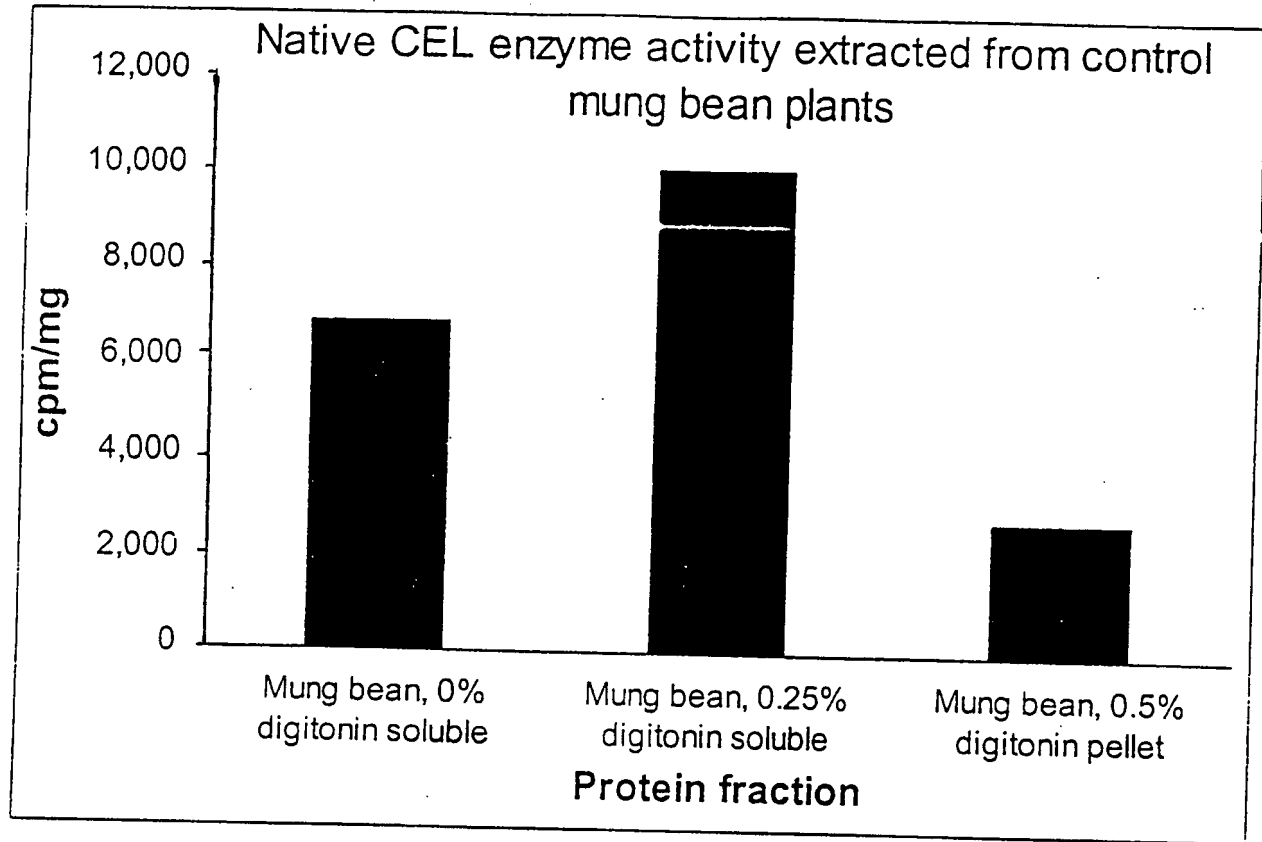
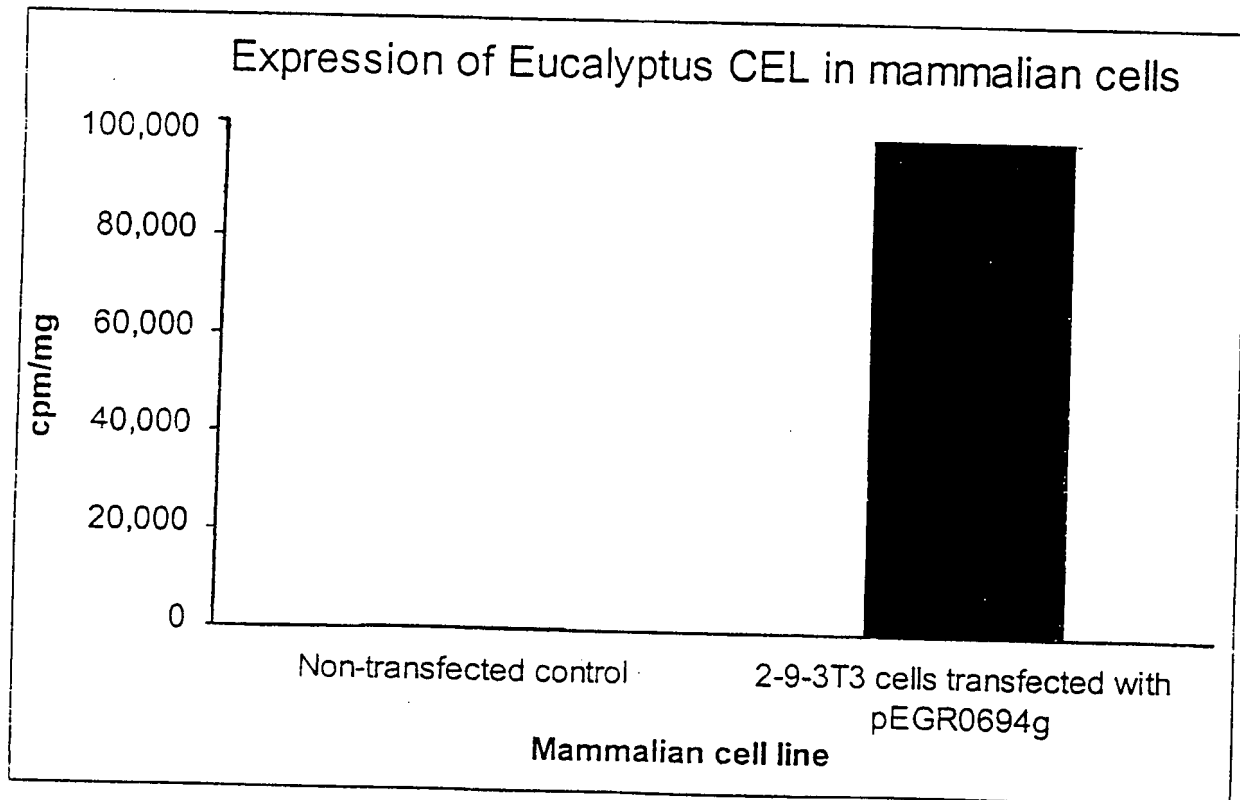
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Figure 1

Figure 2



SEQUENCE LISTING

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<210> 10

<211> 400

<212> DNA

<213> Pinus radiata

<400> 10

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<210> 11

<211> 619

<212> DNA

<213> Pinus radiata

<400> 11

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<210> 12

<211> 719

<212> DNA

<213> Eucalyptus grandis

<400> 12

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<210> 13

<211> 759

<212> DNA

<213> Eucalyptus grandis

<400> 13

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<210> 14

<211> 1407

<212> DNA

<213> Eucalyptus grandis

<400> 14

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<210> 15

<211> 2913

<212> DNA

<213> *Eucalyptus grandis*

<400> 15

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<210> 16
 <211> 401
 <212> DNA
 <213> Pinus radiata

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 <211> 477
 <212> DNA
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 <211> 503
 <212> DNA
 <213> Eucalyptus grandis

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 <211> 413
 <212> DNA
 <213> Eucalyptus grandis

<400> 19

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<210> 20

<211> 1108

<212> DNA

<213> Pinus radiata

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<210> 21

<211> 559

<212> DNA

<213> Eucalyptus grandis

<400> 21

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<210> 22

<211> 1036

<212> DNA

<213> Pinus radiata

<400> 22

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<210> 23

<211> 467

<212> DNA

<213> *Eucalyptus grandis*

<400> 23

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<210> 24

<211> 704

<212> DNA

<213> *Pinus radiata*

<400> 24

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<210> 25

<211> 712

<212> DNA

<213> *Pinus radiata*

<400> 25

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<210> 26

<211> 789

<212> DNA

<213> *Eucalyptus grandis*

<400> 26

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<210> 27

<211> 2132

<212> DNA

<213> *Pinus radiata*

<400> 27

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<210> 28

<211> 2588

<212> DNA

<213> *Eucalyptus grandis*

<400> 28

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<210> 29

<211> 627

<212> DNA

<213> *Eucalyptus grandis*

<400> 29

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<210> 30

<211> 151

<212> PRT

<213> *Pinus radiata*

<400> 30

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35           40           45
Ser Ser Leu Cys Asp Tyr Arg Ile Phe Ala Asp Ser Lys Arg Lys Lys
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His Ala Ile Phe Arg Lys Gln Asn Ile Asn Arg Ser Thr Val Val Ser
65           70           75           80
Pro Arg Ala Val Ser Asp Thr Phe Ser Glu Leu Thr Cys Leu Asp Pro
85           90           95
Val Ala Ser Arg Ser Val Leu Gly Ile Ile Leu Gly Gly Gly Ala Gly
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Thr Arg Leu Tyr Pro Leu Thr Lys Lys Arg Ala Lys Pro Ala Val Pro
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 <213> Eucalyptus grandis

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 <213> Eucalyptus grandis

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 Gly Lys Asn Thr Lys Ile Arg Asn Cys Ile Ile Asp Lys Asn Ala Lys
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 Ile Gly Lys Asp Val Ala Ile Val Asn Lys Asp Gly Val Glu Glu Ala
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 <213> Pinus radiata

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<210> 34
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 <212> PRT
 <213> Pinus radiata

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 35 40 45
 Pro Thr Gly Val Met Gly Trp Trp Pro Ser Arg Ala Val Thr Tyr Leu
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 Glu Asn His Asp Thr Gly Ser Thr Gln Gly His Trp Pro Phe Pro Arg
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 <212> PRT
 <213> Eucalyptus grandis

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 130 135 140
 Leu Asp Ala Ser Glu Pro Tyr Phe Ala Val Gly Glu Tyr Trp Asp Ser

145 150 155 160
 Leu Ser Tyr Thr Tyr Gly Glu Met Asp His Asn Gln Asp Ala His Arg
 165 170 175
 Gln Arg Ile Ile Asp Trp Ile Asn Ala Thr Asn Gly Thr Ala Gly Ala
 180 185 190
 Phe Asp Val Thr Thr Lys Gly Ile Leu His Ala Ala Leu Glu Arg Cys
 195 200 205
 Glu Tyr Trp Arg Leu Ser Asp Gln Lys Gly Lys Pro Pro Gly Val Val
 210 215 220
 Gly Trp Trp Pro Ser Arg Ala Val Thr Phe Val Glu Asn His Asp Thr
 225 230 235 240
 Gly Ser Thr Gln Gly His Trp Arg Phe Pro Ser Gly Lys Glu Met Gln
 245 250 255
 Gly Tyr Ala Tyr Ile Leu Thr His Pro Gly Thr Pro Ala Val Phe Tyr
 260 265 270
 Asp His Ile Phe Ser His Tyr Gln Ser Glu Ile Gly Ser Leu Ile Ser
 275 280 285
 Ile Arg Asn Arg Asn Lys Ile His Cys Arg Ser Thr Ile Lys Ile Thr
 290 295 300
 Lys Ala Glu Arg Asp Val Tyr Ala Ala Ile Ile Asp Asp Lys Val Ala
 305 310 315 320
 Met Lys Ile Gly Pro Gly Tyr Tyr Glu Pro Gln Ser
 325 330

<210> 36

<211> 251

<212> PRT

<213> Eucalyptus grandis

<400> 36

Met Met Glu Ser Gly Val Pro Leu Cys Asn Thr Cys Gly Glu Ala Val
 1 5 10 15
 Gly Val Asp Glu Lys Gly Glu Val Phe Val Ala Cys Gln Glu Cys Asn
 20 25 30
 Phe Ala Ile Cys Lys Ala Cys Val Glu Tyr Glu Ile Lys Glu Gly Arg
 35 40 45
 Lys Ala Cys Leu Arg Cys Gly Thr Pro Phe Glu Ala Asn Ser Met Ala
 50 55 60
 Asp Ala Glu Arg Asn Glu Leu Gly Ser Arg Ser Thr Met Ala Ala Gln
 65 70 75 80
 Leu Asn Asp Pro Gln Asp Thr Gly Ile His Ala Arg His Ile Ser Ser
 85 90 95
 Val Ser Thr Leu Asp Ser Glu Tyr Asn Asp Glu Thr Gly Asn Pro Ile
 100 105 110
 Trp Lys Asn Arg Val Glu Ser Trp Lys Asp Lys Lys Asn Lys Lys Lys
 115 120 125
 Lys Ala Pro Thr Lys Ala Glu Lys Glu Ala Gln Val Pro Pro Glu Gln
 130 135 140
 Gln Met Glu Glu Lys Gln Ile Ala Asp Ala Ser Glu Pro Leu Ser Thr
 145 150 155 160
 Val Ile Pro Ile Ala Lys Ser Lys Leu Ala Pro Tyr Arg Thr Val Ile
 165 170 175
 Ile Met Arg Leu Ile Ile Leu Ala Leu Phe Phe His Tyr Arg Val Thr
 180 185 190
 His Pro Val Asp Ser Ala Tyr Pro Leu Trp Leu Thr Ser Ile Ile Cys
 195 200 205
 Glu Ile Trp Phe Ala Tyr Ser Trp Val Leu Asp Gln Phe Pro Lys Trp

210 215 220
 Ser Pro Val Asn Arg Ile Thr His Val Asp Arg Leu Ser Ala Arg Tyr
 225 230 235 240
 Glu Lys Glu Gly Glu Pro Ser Glu Leu Ala Val
 245 250

<210> 37
 <211> 127
 <212> PRT
 <213> Pinus radiata

<400> 37
 Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Tyr Gln
 1 5 10 15
 His His Lys Lys Ala Gly Ala Met Asn Ala Leu Val Arg Val Ser Ala
 20 25 30
 Val Leu Thr Asn Ala Pro Phe Ile Leu Asn Leu Asp Cys Asp His Tyr
 35 40 45
 Leu Asn Asn Ser Lys Ala Val Arg Glu Ala Met Cys Phe Leu Met Asp
 50 55 60
 Pro Gln Leu Gly Lys Lys Leu Cys Tyr Val Gln Phe Pro Gln Arg Phe
 65 70 75 80
 Asp Gly Ile Asp Arg His Asp Arg Tyr Ala Asn Arg Asn Thr Val Phe
 85 90 95
 Phe Asp Ile Asn Met Lys Gly Leu Asp Gly Ile Gln Gly Pro Val Tyr
 100 105 110
 Val Gly Thr Gly Cys Val Phe Asn Arg Gln Ala Leu Tyr Gly Tyr
 115 120 125

<210> 38
 <211> 534
 <212> PRT
 <213> Eucalyptus grandis

<400> 38
 His Tyr Ile Asn Asn Ser Lys Ala Ile Arg Glu Ala Met Cys Phe Leu
 1 5 10 15
 Met Asp Pro Gln Leu Gly Lys Lys Leu Cys Tyr Val Gln Phe Pro Gln
 20 25 30
 Arg Phe Asp Gly Ile Asp Arg His Asp Arg Tyr Ala Asn Arg Asn Ile
 35 40 45
 Val Phe Phe Asp Ile Asn Met Arg Gly Leu Asp Gly Ile Gln Gly Pro
 50 55 60
 Val Tyr Val Gly Thr Gly Cys Val Phe Asn Arg Gln Ala Leu Tyr Gly
 65 70 75 80
 Tyr Asp Pro Pro Val Ser Gln Lys Arg Pro Lys Met Thr Cys Asp Cys
 85 90 95
 Trp Pro Ser Trp Cys Ser Cys Cys Cys Gly Gly Ser Arg Lys Ser Lys
 100 105 110
 Ser Lys Lys Lys Asp Asp Thr Ser Leu Leu Gly Pro Val His Ala Lys
 115 120 125
 Lys Lys Lys Met Thr Gly Lys Asn Tyr Leu Lys Lys Lys Gly Ser Gly
 130 135 140
 Pro Val Phe Asp Leu Glu Asp Ile Glu Glu Gly Leu Glu Gly Phe Asp
 145 150 155 160
 Glu Leu Glu Lys Ser Ser Leu Met Ser Gln Lys Asn Phe Glu Lys Arg
 165 170 175

Phe Gly Gln Ser Pro Val Phe Ile Ala Ser Thr Leu Met Glu Asp Gly
 180 185 190
 Gly Leu Pro Glu Gly Thr Asn Ser Thr Ser Leu Ile Lys Glu Ala Ile
 195 200 205
 His Val Ile Ser Cys Gly Tyr Glu Glu Lys Thr Glu Trp Gly Lys Glu
 210 215 220
 Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe
 225 230 235 240
 Lys Met His Cys Arg Gly Trp Lys Ser Val Tyr Cys Met Pro Lys Arg
 245 250 255
 Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu His
 260 265 270
 Gln Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Phe Leu Ser Arg
 275 280 285
 His Cys Pro Leu Trp Tyr Ala Trp Gly Gly Lys Leu Lys Leu Leu Glu
 290 295 300
 Arg Leu Ala Tyr Ile Asn Thr Ile Val Tyr Pro Phe Thr Ser Ile Pro
 305 310 315 320
 Leu Leu Phe Tyr Cys Thr Ile Pro Ala Val Cys Leu Leu Thr Gly Lys
 325 330 335
 Phe Ile Ile Pro Thr Leu Thr Asn Phe Ala Ser Ile Trp Phe Leu Ala
 340 345 350
 Leu Phe Leu Ser Ile Ile Ala Thr Gly Val Leu Glu Leu Arg Trp Ser
 355 360 365
 Gly Val Ser Ile Glu Asp Trp Trp Arg Asn Glu Gln Phe Trp Val Ile
 370 375 380
 Gly Gly Val Ser Ala His Leu Phe Ala Val Phe Gln Gly Leu Leu Lys
 385 390 395 400
 Val Leu Ala Gly Val Asp Thr Asn Phe Thr Val Thr Ala Lys Ala Ala
 405 410 415
 Glu Asp Ser Glu Phe Gly Glu Leu Tyr Leu Phe Lys Trp Thr Thr Leu
 420 425 430
 Leu Ile Pro Pro Thr Thr Leu Ile Ile Leu Asn Met Val Gly Val Val
 435 440 445
 Ala Gly Val Ser Asp Ala Ile Asn Asn Gly Tyr Gly Ser Trp Gly Pro
 450 455 460
 Leu Phe Gly Lys Leu Phe Phe Ala Phe Trp Val Ile Val His Leu Tyr
 465 470 475 480
 Pro Phe Leu Lys Gly Leu Met Gly Lys Gln Asn Arg Thr Pro Thr Ile
 485 490 495
 Val Val Leu Trp Ser Val Leu Leu Ala Ser Ile Phe Ser Leu Val Trp
 500 505 510
 Val Arg Ile Asp Pro Phe Leu Pro Lys Gln Thr Gly Pro Val Leu Lys
 515 520 525
 Pro Cys Gly Val Glu Cys
 530

<210> 39
 <211> 133
 <212> PRT
 <213> Pinus radiata

<400> 39
 Leu Ala Leu Phe Leu Thr Trp Arg Val Lys Asn Pro Asn Thr Asp Ala
 1 5 10 15
 Tyr Trp Leu Trp Gly Met Ser Ile Val Cys Glu Leu Trp Phe Ala Phe
 20 25 30

Ser Trp Leu Leu Asp Gln Leu Pro Lys Leu Cys Pro Ile Asn Arg Ser
 35 40 45
 Thr Asp Leu Ala Val Leu Lys Asp Lys Phe Glu Ser Pro Thr Gly Asp
 50 55 60
 Asn Pro Ala Gly Arg Ser Asp Leu Pro Gly Ile Asp Cys Phe Val Ser
 65 70 75 80
 Thr Ala Asp Pro Glu Lys Glu Pro Pro Leu Val Thr Ala Asn Thr Ile
 85 90 95
 Leu Ser Ile Leu Ser Ala Asp Tyr Pro Val Glu Lys Leu Ala Cys Tyr
 100 105 110
 Val Ser Asp Asp Gly Gly Ala Leu Leu Thr Phe Glu Ala Met Ala Glu
 115 120 125
 Ala Ala Ser Phe Ala
 130

<210> 40
 <211> 206
 <212> PRT
 <213> Pinus radiata

<400> 40
 Leu Leu Val Ser Gln Arg Ser Phe Glu Lys Ser Phe Gly Gln Ser Ser
 1 5 10 15
 Val Phe Ile Ala Ser Thr Leu Met Asp Asn Gly Gly Val Pro Glu Ser
 20 25 30
 Thr Asn Pro Ala Ser Leu Ile Lys Glu Ala Ile His Val Ile Ser Cys
 35 40 45
 Gly Tyr Glu Glu Lys Thr Glu Trp Gly Lys Glu Val Gly Trp Ile Tyr
 50 55 60
 Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met His Cys Arg
 65 70 75 80
 Gly Trp Arg Ser Ile Tyr Cys Met Pro Lys Arg Pro Ala Phe Lys Gly
 85 90 95
 Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu His Gln Val Leu Arg Trp
 100 105 110
 Ala Leu Gly Ser Ile Glu Ile Leu Phe Ser Arg His Cys Pro Leu Trp
 115 120 125
 Tyr Gly Phe Gly Ala Gly Arg Leu Lys Trp Leu Glu Arg Leu Ala Tyr
 130 135 140
 Thr Asn Thr Ile Val Tyr Pro Leu Thr Ser Leu Pro Leu Ile Ala Tyr
 145 150 155 160
 Cys Thr Leu Pro Ala Ile Cys Leu Leu Thr Gly Glu Phe Ile Ile Pro
 165 170 175
 Thr Leu Ser Asn Leu Ala Ser Ile Tyr Phe Met Leu Leu Phe Ile Ser
 180 185 190
 Ile Ile Val Thr Gly Val Leu Glu Leu Arg Trp Ser Gly Val
 195 200 205

<210> 41
 <211> 239
 <212> PRT
 <213> Eucalyptus grandis

<400> 41
 Leu Ala Leu Arg His Asp Arg Glu Gly Glu Pro Ser Gln Leu Ala Pro
 1 5 10 15
 Val Asp Val Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro Leu

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<210> 42
<211> 253
<212> PRT
<213> Eucalyptus grandis
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19

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<210> 43
<211> 469
<212> PRT
<213> Eucalyptus grandis
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20

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          325          330          335
Met Leu Ile Ser Gln Met Ser Phe Glu Lys Thr Phe Gly Leu Ser Thr
          340          345          350
Val Phe Ile Glu Ser Thr Leu Leu Ala Asn Gly Gly Val Pro Glu Ser
          355          360          365
Ala His Pro Ser Met Leu Ile Lys Glu Ala Ile His Val Ile Ser Cys
          370          375          380
Gly Tyr Glu Glu Lys Thr Ala Trp Gly Lys Glu Ile Gly Trp Ile Tyr
385          390          395          400
Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met His Cys Arg
          405          410          415
Gly Trp Arg Ser Val Tyr Cys Met Pro Leu Arg Pro Ala Phe Lys Gly
          420          425          430
Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu His Gln Val Leu Arg Trp
          435          440          445
Ala Leu Gly Ser Val Glu Ile Phe Leu Ser Arg His Cys Pro Leu Trp
          450          455          460
Tyr Gly Phe Gly Gly
465

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<210> 44
<211> 805
<212> PRT
<213> Eucalyptus grandis

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<400> 44
Met Ala Asp Arg Met Leu Thr Arg Ser His Ser Leu Arg Glu Arg Leu
1          5          10          15
Asp Glu Thr Leu Ser Ala His Arg Asn Asp Ile Val Ala Phe Leu Ser
          20          25          30
Arg Val Glu Ala Lys Gly Lys Gly Ile Leu Gln Arg His Gln Ile Phe
          35          40          45
Ala Glu Phe Glu Ala Ile Ser Glu Glu Ser Arg Ala Lys Leu Leu Asp
          50          55          60
Gly Ala Phe Gly Glu Val Leu Lys Ser Thr Gln Glu Ala Ile Val Ser
65          70          75          80
Pro Pro Trp Val Ala Leu Ala Val Arg Pro Arg Pro Gly Val Trp Glu
          85          90          95
His Ile Arg Val Asn Val His Ala Leu Val Leu Glu Gln Leu Glu Val
          100          105          110
Ala Glu Tyr Leu His Phe Lys Glu Glu Leu Ala Asp Gly Ser Leu Asn
          115          120          125
Gly Asn Phe Val Leu Glu Leu Asp Phe Glu Pro Phe Thr Ala Ser Phe
          130          135          140
Pro Arg Pro Thr Leu Ser Lys Ser Ile Gly Asn Gly Val Glu Phe Leu
145          150          155          160
Asn Arg His Leu Ser Ala Lys Leu Phe His Asp Lys Glu Ser Leu His
          165          170          175
Pro Leu Leu Glu Phe Leu Gln Val His Cys Tyr Lys Gly Lys Asn Met
          180          185          190
Met Val Asn Ala Arg Ile Gln Asn Val Phe Ser Leu Gln His Val Leu
          195          200          205
Arg Lys Ala Glu Glu Tyr Leu Thr Ser Leu Lys Pro Glu Thr Pro Tyr
          210          215          220
Ser Gln Phe Glu His Lys Phe Gln Glu Ile Gly Leu Glu Arg Gly Trp
225          230          235          240
Gly Asp Thr Ala Glu Arg Val Leu Glu Met Ile Gln Leu Leu Leu Asp

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				245					250				255		
Leu	Leu	Glu	Ala	Pro	Asp	Pro	Cys	Thr	Leu	Glu	Lys	Phe	Leu	Asp	Arg
			260					265					270		
Val	Pro	Met	Val	Phe	Asn	Val	Val	Ile	Met	Ser	Pro	His	Gly	Tyr	Phe
		275					280					285			
Ala	Gln	Asp	Asp	Val	Leu	Gly	Tyr	Pro	Asp	Thr	Gly	Gly	Gln	Val	Val
		290				295					300				
Tyr	Ile	Leu	Asp	Gln	Val	Arg	Ala	Leu	Glu	Glu	Glu	Met	Leu	His	Arg
305				310					315						320
Ile	Lys	Gln	Gln	Gly	Leu	Asp	Ile	Thr	Pro	Arg	Ile	Leu	Ile	Ile	Thr
				325					330					335	
Arg	Leu	Leu	Pro	Asp	Ala	Val	Gly	Thr	Thr	Cys	Gly	Gln	Arg	Leu	Glu
			340					345				350			
Lys	Val	Phe	Gly	Thr	Glu	Tyr	Ser	His	Ile	Leu	Arg	Val	Pro	Phe	Arg
		355					360					365			
Asn	Glu	Lys	Gly	Val	Val	Arg	Lys	Trp	Ile	Ser	Arg	Phe	Glu	Val	Trp
		370				375					380				
Pro	Tyr	Leu	Glu	Arg	Tyr	Thr	Glu	Asp	Val	Ala	Ser	Glu	Leu	Ala	Gly
385				390					395						400
Glu	Leu	Gln	Gly	Lys	Pro	Asp	Leu	Ile	Ile	Gly	Asn	Tyr	Ser	Asp	Gly
				405					410					415	
Asn	Ile	Val	Ala	Ser	Leu	Leu	Ala	His	Lys	Leu	Gly	Val	Thr	Gln	Cys
			420					425					430		
Thr	Ile	Ala	His	Ala	Leu	Glu	Lys	Thr	Lys	Tyr	Pro	Glu	Ser	Asp	Ile
		435					440					445			
Tyr	Trp	Lys	Lys	Phe	Glu	Glu	Lys	Tyr	His	Phe	Ser	Cys	Gln	Phe	Thr
	450					455				460					
Ala	Asp	Leu	Ile	Ala	Met	Asn	His	Thr	Asp	Phe	Ile	Ile	Thr	Ser	Thr
465				470					475						480
Phe	Gln	Glu	Ile	Ala	Gly	Ser	Lys	Asp	Thr	Val	Gly	Gln	Tyr	Glu	Ser
				485					490					495	
His	Met	Asn	Phe	Thr	Leu	Pro	Gly	Leu	Tyr	Arg	Val	Val	His	Gly	Ile
			500					505					510		
Asp	Val	Phe	Asp	Pro	Lys	Phe	Asn	Ile	Val	Ser	Pro	Gly	Ala	Asp	Met
		515					520					525			
Ser	Ile	Tyr	Phe	Ala	Tyr	Thr	Glu	Gln	Glu	Arg	Arg	Leu	Lys	Ser	Phe
		530				535					540				
His	Pro	Glu	Ile	Glu	Glu	Leu	Leu	Phe	Ser	Asp	Val	Glu	Asn	Lys	Glu
545				550					555						560
His	Leu	Cys	Val	Leu	Lys	Asp	Lys	Lys	Lys	Pro	Ile	Ile	Phe	Thr	Met
				565					570					575	
Ala	Arg	Leu	Asp	Arg	Val	Lys	Asn	Leu	Thr	Gly	Leu	Val	Glu	Trp	Tyr
			580					585					590		
Gly	Lys	Asn	Ser	Lys	Leu	Arg	Glu	Leu	Ala	Asn	Leu	Val	Val	Val	Gly
		595													

Lys Ser Gly Tyr His Ile Asp Pro Tyr His Gly Asp Gln Ala Ala Glu
 705 710 715 720
 Leu Leu Val Asp Phe Phe Asn Lys Cys Lys Ile Asp Gln Ser His Trp
 725 730 735
 Asp Glu Ile Ser Lys Gly Ala Met Gln Arg Ile Glu Glu Lys Tyr Thr
 740 745 750
 Trp Lys Ile Tyr Ser Glu Arg Leu Leu Asn Leu Thr Ala Val Tyr Gly
 755 760 765
 Phe Trp Lys His Val Thr Asn Leu Asp Arg Arg Glu Ser Arg Arg Tyr
 770 775 780
 Leu Glu Met Phe Tyr Ala Leu Lys Tyr Arg Pro Leu Ala Gln Ser Val
 785 790 795 800
 Pro Pro Ala Val Glu
 805

<210> 45
 <211> 133
 <212> PRT
 <213> Pinus radiata

<400> 45
 Ile Lys Gln Gln Gly Leu Asp Ile Thr Pro Gln Ile Ile Val Val Thr
 1 5 10 15
 Arg Leu Ile Pro Glu Ala His Gly Thr Thr Cys Asn Gln Arg Ile Glu
 20 25 30
 Lys Val Ser Gly Thr Gln His Ser Leu Ile Leu Arg Val Pro Phe Arg
 35 40 45
 Thr Glu Lys Gly Val Leu Arg Asn Trp Val Ser Arg Phe Asp Val Trp
 50 55 60
 Pro Tyr Leu Glu Arg Phe Ser Glu Asp Val Thr Asn Glu Val Thr Ala
 65 70 75 80
 Glu Leu Lys Gly Gln Pro Asp Leu Ile Ile Gly Asn Tyr Ser Asp Gly
 85 90 95
 Asn Leu Val Ala Ser Leu Ile Ala His Lys Gln Gly Ile Thr Gln Cys
 100 105 110
 Asn Ile Ala His Ala Leu Glu Lys Thr Lys Tyr Pro Asp Ser Asp Ile
 115 120 125
 Tyr Trp Lys Asn Phe
 130

<210> 46
 <211> 158
 <212> PRT
 <213> Pinus radiata

<400> 46
 His Gly Ile Asp Val Phe Asp Pro Lys Phe Asn Ile Val Ser Pro Gly
 1 5 10 15
 Ala Asp Met Gln Ile Tyr Phe Pro Tyr Thr Glu Lys Gln His Arg Leu
 20 25 30
 Thr Thr Leu His Gly Thr Ile Glu Glu Leu Leu Phe Ser Pro Glu Gln
 35 40 45
 Thr Ala Glu His Met Cys Ala Leu Asn Asp Arg Lys Lys Pro Ile Ile
 50 55 60
 Phe Ser Met Ala Arg Leu Asp Arg Val Lys Asn Met Thr Gly Leu Val
 65 70 75 80
 Glu Trp Phe Ala Lys Ser Lys Arg Leu Arg Glu Leu Val Asn Leu Val

				85					90					95			
Val	Val	Ala	Gly	Asp	Ile	Asp	Pro	Ser	Lys	Ser	Lys	Asp	Arg	Glu	Glu		
			100					105					110				
Val	Ala	Glu	Ile	Glu	Lys	Met	His	Arg	Leu	Val	Lys	Glu	Tyr	Asn	Leu		
		115					120					125					
Asn	Gly	Gln	Phe	Arg	Trp	Ile	Cys	Ala	Gln	Lys	Asn	Arg	Val	Arg	Asn		
	130					135					140						
Gly	Glu	Leu	Tyr	Arg	Tyr	Ile	Cys	Asp	Thr	Arg	Gly	Ala	Phe				
145					150					155							

<210> 47
 <211> 144
 <212> PRT
 <213> Eucalyptus grandis

Met	Ala	Asp	Arg	Val	Leu	Asn	Arg	Ser	His	Ser	Pro	Arg	Glu	Arg	Leu		
1				5					10				15				
Asp	Glu	Ala	Leu	Phe	Ala	Asp	Arg	Asn	Asp	Cys	Leu	Val	Phe	Leu	Ser		
		20						25					30				
Arg	Leu	Lys	Ala	Lys	Gly	Lys	Gly	Ile	Leu	Gln	Arg	His	Gln	Ile	Leu		
	35					40						45					
Ala	Val	Phe	Glu	Ala	Ile	Pro	Glu	Glu	Ser	Arg	Ala	Arg	Leu	Leu	Asp		
	50					55					60						
Gly	Ala	Phe	Gly	Lys	Val	Leu	Lys	Ser	Thr	Gln	Glu	Ala	Ile	Val	Ser		
65					70					75					80		
Ser	Pro	Trp	Val	Ala	Leu	Ala	Val	Arg	Ala	Arg	Pro	Gly	Val	Trp	Glu		
				85					90					95			
His	Ile	Arg	Val	Asn	Val	His	Ala	Leu	Leu	Leu	Glu	His	Phe	Gln	Val		
			100					105					110				
Asp	Glu	Tyr	Leu	His	Phe	Lys	Glu	Ala	Leu	Val	Asp	Gly	Ser	Leu	Asn		
	115					120					125						
Pro	Asp	Ser	Glu	Pro	Leu	Thr	Ala	Thr	Phe	Gly	Arg	Arg	Pro	Phe	His		
	130					135					140						

<210> 48
 <211> 90
 <212> PRT
 <213> Eucalyptus grandis

Gln	Glu	Ala	Ile	Val	Ser	Pro	Pro	Trp	Val	Ala	Leu	Ala	Val	Arg	Pro		
1				5					10					15			
Arg	Pro	Gly	Val	Trp	Glu	His	Ile	Arg	Val	Asn	Val	His	Ala	Leu	Val		
		20						25					30				
Leu	Glu	Gln	Leu	Glu	Val	Ala	Glu	Tyr	Leu	His	Phe	Lys	Glu	Glu	Leu		
	35						40					45					
Ala	Asp	Gly	Ser	Leu	Asn	Gly	Asn	Phe	Val	Leu	Glu	Leu	Asp	Phe	Glu		
	50					55					60						
Pro	Phe	Thr	Ala	Ser	Phe	Pro	Arg	Pro	Thr	Leu	Ser	Lys	Ser	Ile	Gly		
65					70					75					80		
Asn	Gly	Val	Glu	Phe	Arg	Asn	Arg	His	Leu								
				85					90								

<210> 49
 <211> 247
 <212> PRT

<213> Pinus radiata

<400> 49

Met Ala Ala Ala Pro Ala Val Ala Ser Pro Ala Ala Glu Thr Asp Arg
 1 5 10 15
 Ile Pro Lys Leu Gln Ala Glu Val Thr Lys Leu Asn Gln Ile Ser Asp
 20 25 30
 Asn Glu Lys Glu Gly Phe Val Arg Leu Val Ser Arg Tyr Leu Ser Gly
 35 40 45
 Glu Glu Glu Lys Ile Glu Trp Glu Lys Ile Lys Thr Pro Thr Asp Glu
 50 55 60
 Ile Val Val Pro Tyr Asp Thr Leu Ala Ala Leu Gly Glu Asp Pro Ser
 65 70 75 80
 Glu Thr Lys Glu Leu Leu Asp Lys Leu Val Val Leu Lys Leu Asn Gly
 85 90 95
 Gly Leu Gly Thr Thr Met Gly Cys Thr Gly Pro Lys Ser Val Ile Glu
 100 105 110
 Val Arg Asn Gly Leu Thr Phe Leu Asp Leu Ile Val Lys Gln Ile Glu
 115 120 125
 Ser Leu Asn Asn Lys Tyr Asp Ser Lys Val Pro Leu Val Leu Met Asn
 130 135 140
 Ser Phe Asn Thr His Asp Asp Thr Ile Lys Ile Val Glu Lys Tyr Ser
 145 150 155 160
 Gly Ser Asn Ile Asp Ile His Ile Phe Asn Gln Ser Gln Tyr Pro Arg
 165 170 175
 Met Val Ala Glu Asp Leu Thr Pro Trp Pro Thr Lys Gly Arg Thr Asp
 180 185 190
 Lys Glu Ala Trp Tyr Pro Pro Gly His Gly Asp Val Phe Pro Ala Leu
 195 200 205
 Leu Asn Ser Gly Lys Leu Asp Glu Leu Leu Ser Gln Gly Lys Glu Tyr
 210 215 220
 Val Phe Ile Ala Asn Ser Asp Asn Leu Gly Ala Ile Val Asp Leu Ser
 225 230 235 240
 Ile Leu Phe Ala Leu Val Phe
 245

<210> 50

<211> 103

<212> PRT

<213> Eucalyptus grandis

<400> 50

Met Ala Ala Ala Ala Thr Leu Ser Ala Pro Asp Ala Ala Lys Leu Ser
 1 5 10 15
 Gln Leu Lys Ser Ala Val Ser Gly Leu Gly Gln Ile Ser Glu Ser Glu
 20 25 30
 Lys Asn Gly Phe Ile Asn Leu Val Ser Arg Tyr Leu Ser Gly Glu Ala
 35 40 45
 Gln His Val Asp Trp Ser Lys Ile Gln Thr Pro Thr Asp Glu Ile Val
 50 55 60
 Val Pro Tyr Asp Ser Leu Ala Pro Thr Pro Gln Asp Pro Ala Ala Thr
 65 70 75 80
 Lys Ser Leu Leu Asp Lys Leu Val Val Leu Lys Leu Asn Gly Gly Leu
 85 90 95
 Gly Thr Thr Met Gly Cys Thr
 100

<210> 51
 <211> 253
 <212> PRT
 <213> Pinus radiata

<400> 51
 Ala Asn Ser Asp Asn Leu Gly Ala Ile Val Asp Leu Lys Ile Leu Asn
 1 5 10 15
 His Leu Val Lys Asn Lys Asn Glu Tyr Cys Met Glu Val Thr Pro Lys
 20 25 30
 Thr Leu Ala Asp Val Lys Gly Gly Thr Leu Ile Ser Tyr Glu Gly Arg
 35 40 45
 Val Gln Leu Leu Glu Ile Ala Gln Val Pro Glu Glu His Val Gly Glu
 50 55 60
 Phe Lys Ser Ile Glu Lys Phe Lys Ile Phe Asn Thr Asn Asn Leu Trp
 65 70 75 80
 Val Asn Leu Lys Ala Ile Lys Arg Leu Val Glu Ala Asp Ala Leu Lys
 85 90 95
 Met Glu Ile Ile Pro Asn Pro Lys Glu Val Asp Gly Val Lys Val Leu
 100 105 110
 Gln Leu Glu Thr Ala Ala Gly Ala Ala Ile Arg Phe Phe Asp Arg Ala
 115 120 125
 Ile Gly Val Asn Val Pro Arg Ser Arg Phe Leu Pro Val Lys Ala Thr
 130 135 140
 Ser Asp Leu Leu Leu Val Gln Ser Asp Leu Tyr Thr Val Glu Glu Gly
 145 150 155 160
 Phe Val Ile Arg Asn Pro Ala Arg Val Asn Pro Thr Asn Pro Thr Ile
 165 170 175
 Glu Leu Gly Pro Glu Phe Lys Lys Val Gly Asn Phe Leu Lys Arg Phe
 180 185 190
 Lys Ser Ile Pro Ser Ile Ile Asp Leu Asp Ser Leu Lys Val Ser Gly
 195 200 205
 Asp Val Trp Phe Gly Ser Gly Val Ile Leu Lys Gly Lys Val Ile Ile
 210 215 220
 Glu Ala Lys Gln Gly Ala Thr Leu Glu Ile Pro Asp Glu Ser Val Ile
 225 230 235 240
 Glu Asn Lys Val Val Ser Ser Pro Asp Asp Ile Val Asn
 245 250

<210> 52
 <211> 184
 <212> PRT
 <213> Pinus radiata

<400> 52
 Met Ser Thr Ile Ile Val Pro Val Pro Ile Pro Thr Pro Ser Glu Asp
 1 5 10 15
 Ser Glu Arg Leu Arg Lys Ala Phe Glu Gly Trp Gly Thr Asn Glu Lys
 20 25 30
 Ser Ile Ile Gln Ile Leu Gly His Arg Thr Ala Ala Gln Arg Lys Val
 35 40 45
 Ile Arg Gln Ser Tyr Phe Gln Leu Tyr Glu Glu Asp Leu Leu Lys Arg
 50 55 60
 Leu Glu Ser Glu Leu Ser Ser Asp Phe Glu Lys Ala Val Phe Leu Trp
 65 70 75 80
 Val Leu Asp Pro Ala Glu Arg Asp Ala Val Ile Ser His Gly Ala Ile
 85 90 95

Lys Lys Trp Asn Ala Lys Asn Ile Ser Leu Leu Glu Ile Ser Ser Ala
 100 105 110
 Arg Ser Ser Ala Glu Leu Leu Met Val Arg Gln Ala Tyr His Ile Arg
 115 120 125
 Asp Lys Lys Ser Leu Glu Glu Asp Val Ala Ala His Thr Ser Gly Asn
 130 135 140
 Phe Arg Lys Leu Leu Val Ala Leu Val Ser Ser Tyr Arg Tyr Glu Gly
 145 150 155 160
 Pro Glu Val Asp Met His Leu Ala Ser Tyr Glu Ala Lys Lys Leu Ser
 165 170 175
 Glu Ser Ile Thr Glu Gln Lys Arg
 180

<210> 53
 <211> 213
 <212> PRT
 <213> Pinus radiata

<400> 53
 Met Ala Thr Cys Ser Cys Ala Val Ser Cys Gly Val Asn Pro Val Glu
 1 5 10 15
 Arg Asp Cys Glu Glu Ile His Leu Ala Cys Lys Gly Leu Gly Ser Asp
 20 25 30
 Glu Glu Lys Ile Ile Glu Ile Leu Gly Ser Lys Asn Glu Gln Gln Arg
 35 40 45
 Lys Glu Ile Arg Glu Thr Tyr Tyr Ala Met Tyr Lys Glu Asp Leu Cys
 50 55 60
 Lys Arg Leu Glu Lys Glu Leu His Gly Lys Leu Glu Lys Ala Ile Val
 65 70 75 80
 Leu Trp Met His Glu Pro Ala Asp Arg Asp Ala Ile Ile Ala Gly Thr
 85 90 95
 Ala Leu Glu Gly Trp Cys Thr Asp Asp Arg Ala Leu Ile Glu Val Ile
 100 105 110
 Cys Thr Arg Ser Ser Thr Gln Ile Val Lys Ile Arg Glu Ala Tyr Gln
 115 120 125
 Lys Arg Tyr Gln Arg Cys Leu Asp Asp Asp Val Ile Cys Lys Thr Asn
 130 135 140
 Gly Pro Phe Gln Lys Leu Leu Leu Ala Leu Lys Ala His Arg Cys
 145 150 155 160
 Glu Cys Lys Gly Val Asp Ile Asn Lys Ala Arg Cys Asp Ala Lys Met
 165 170 175
 Leu Tyr Glu Ala Gly Glu Gly Arg Cys Gly Thr Asp Glu Asp Thr Phe
 180 185 190
 Ile Arg Ile Phe Gln Arg Gly Glu Cys Ser Gln Val His Ala Ile Phe
 195 200 205
 Ala Cys Asn Lys Gln
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<210> 54
 <211> 239
 <212> PRT
 <213> Eucalyptus grandis

<400> 54
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 Ala Glu Gln Leu Gln Lys Ala Phe Ala Gly Trp Gly Thr Asn Glu Asp

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      35      40      45
Ile Arg Gln Thr Tyr Ala Glu Thr Tyr Gly Glu Asp Leu Leu Lys Ala
      50      55      60
Leu Asp Lys Glu Leu Ser Ser Asp Phe Glu Arg Ser Val Leu Leu Trp
      65      70      75      80
Thr Leu Asp Pro Ala Glu Arg Asp Ala Phe Leu Ser Asn Glu Ala Thr
      85      90      95
Lys Arg Leu Thr Ser Ser Asn Trp Val Leu Met Glu Ile Ala Cys Thr
      100      105      110
Arg Ser Ser Met Glu Leu Phe Met Val Arg Gln Ala Tyr His Ala Arg
      115      120      125
Tyr Lys Lys Ser Leu Glu Glu Asp Ile Ala Tyr His Thr Thr Gly Asp
      130      135      140
Phe Arg Lys Leu Leu Val Pro Leu Ala Ser Thr Phe Arg Tyr Glu Gly
      145      150      155      160
Pro Glu Val Asn Met Thr Leu Ala Arg Ser Glu Ala Lys Ile Leu His
      165      170      175
Glu Lys Ile His Glu Lys Ala Tyr Asn His Asp Glu Leu Ile Arg Ile
      180      185      190
Val Thr Thr Arg Ser Lys Ala Gln Leu Asn Ala Thr Leu Asn Tyr Tyr
      195      200      205
Asn Asn Glu Phe Gly Asn Ala Ile Asn Lys Asp Leu Lys Ala Asp Pro
      210      215      220
Asn Asp Glu Phe Leu Lys Leu Leu Arg Ser Ala Ile Lys Cys Leu
      225      230      235

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<210> 55
 <211> 242
 <212> PRT
 <213> Pinus radiata

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      <400> 55
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Leu Ile Ile Glu Ile Leu Gly His Arg Thr Ala Ala Gln Arg Arg Ala
      35      40      45
Ile Arg Gln Thr Tyr Thr Gln Leu Tyr Glu Glu Asp Phe Leu Lys Arg
      50      55      60
Leu Gln Ser Glu Leu Thr Arg Asp Phe Glu Arg Ala Leu Leu Leu Trp
      65      70      75      80
Ser Leu Asp Pro Pro Glu Arg Asp Ala Leu Leu Ala Tyr Glu Ser Ile
      85      90      95
Lys Lys Trp Ser Pro Asn Asn Arg Ser Leu Leu Glu Ile Ser Ser Ala
      100      105      110
Arg Ser Ser Thr Glu Leu Trp Ser Val Arg Gln Ala Tyr His Ile Arg
      115      120      125
Tyr Lys Lys Ser Leu Glu Glu Asp Val Ala Ser His Thr His Gly Asp
      130      135      140
Phe Arg Lys Leu Leu Val Gln Leu Val Ser Ser Tyr Arg Tyr Glu Gly
      145      150      155      160
Pro Glu Val Asp Thr Arg Leu Ala Lys Ser Glu Ala Lys Gln Leu His
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Glu Ala Ile Lys Asp Lys Ala Phe Gly Asn Glu Glu Leu Ile Arg Ile

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<210> 57

<211> 418

<212> DNA

<213> *Eucalyptus grandis*

<400> 57

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atacaatcaa	gatagtcaca	gacaacgaat	tgtaaactgg	attgatggca	cgggacagct	180
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ttggcgtctg	cgtgatccga	aaggggaagcc	acctggtgtg	atgggatggg	ggccatcaag	300
agctgttacc	ttccttgata	accacgatac	aggctcaaca	caggctcact	ggcctttccc	360
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<210> 58

<211> 1396

<212> DNA

<213> *Eucalyptus grandis*

<400> 58

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<210> 59

<211> 1861

<212> DNA

<213> *Pinus radiata*

<400> 59

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gactaagaag	agagcgaaac	cagctgttcc	tttgggtgcc	aattataggc	tgatcgatat	420
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<210> 60

<211> 145

<212> DNA

<213> Eucalyptus grandis

<400> 60

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<210> 61

<211> 441

<212> DNA

<213> Eucalyptus grandis

<400> 61

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ccagccgcag	tggtctcgga	attatactag	gaggtggggc	cgggaccctg	ctctaccccc	180
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ttcctgtgag	caattgcttg	aatagcaacg	tatcgaagat	ctatgtcctc	acgcagttca	300
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<210> 62
 <211> 460
 <212> DNA
 <213> Eucalyptus grandis

<400> 62
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<210> 63
 <211> 341
 <212> DNA
 <213> Eucalyptus grandis

<400> 63
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<210> 64
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 <212> DNA
 <213> Eucalyptus grandis

<400> 64
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 ccatatattg catcaatggg agtttatgcc ttcaagacgg agtccttact aaatcttctg 240
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<210> 65
 <211> 453
 <212> DNA
 <213> Eucalyptus grandis

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<210> 66
 <211> 2055
 <212> DNA
 <213> *Eucalyptus grandis*

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<210> 67
 <211> 669
 <212> DNA
 <213> *Pinus radiata*

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<210> 68

<211> 403

<212> DNA

<213> Pinus radiata

<400> 68

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<210> 69

<211> 3851

<212> DNA

<213> Pinus radiata

<400> 69

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<210> 70

<211> 736

<212> DNA

<213> Pinus radiata

<400> 70

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gggagtgtctg	catggaagga	gagagtggag	aattggaaaag	cgaagcacga	taagaaaagt	660
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<210> 71

<211> 448

<212> DNA

<213> Eucalyptus grandis

<400> 71

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gaaaaagttt	gatgagaagt	accacttttc	atgtcaattt	actgctgact	tactagccat	360
gaataatgca	gactttatca	tcaccagcac	ataccaagag	atagcaggaa	cgaaaaatac	420
cgttgggcag	tatgagagcc	acactgcc				448

<210> 72

<211> 448

<212> DNA

<213> Eucalyptus grandis

<400> 72

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ccacactgcc	ttcactcttc	cagggctgta	cagagttggt	catgggattg	atgtttttga	180
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ggcaaggctg	gacaaagtga	agaatatgac	agggctgggt	gaatgctatg	ctaagaattc	420
aaaattgagg	gaactagcaa	atcttgta				448

<210> 73

<211> 184

<212> DNA

<213> Eucalyptus grandis

<400> 73

ggaagccata	gttttgcttc	ctttcgtggc	tatagcagtt	cgtccaaggc	ctgggtgtctg	60
ggaatatgtc	cgtgtgaatg	tccatgaact	gagtgtagag	caactgactg	tttcagagta	120
tctgggattc	aagggaagaac	ttgtggatgg	caagtctgaa	gacagttttg	ttcttgagct	180
tgat						184

<210> 74

<211> 1145

<212> DNA

<213> Pinus radiata

<400> 74

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tttcaagata	tgtagcacag	gggaagaagg	ttttgcaacc	tcataaaata	ttagatggat	180
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<210> 75

<211> 1169

<212> DNA

<213> Pinus radiata

<400> 75

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<210> 76

<211> 420

<212> DNA

<213> Pinus radiata

<400> 76

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<210> 77

<211> 448

<212> DNA

<213> Pinus radiata

<400> 77

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ggcataggaa	gaatgttgac	ttgaaccc				448

<210> 78

<211> 372

<212> DNA

<213> Eucalyptus grandis

<400> 78

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ccccttcagt	ga					372

<210> 79

<211> 1960

<212> DNA

<213> Eucalyptus grandis

<400> 79

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<210> 80

<211> 2045

<212> DNA

<213> *Pinus radiata*

<400> 80

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gcaatagtgt	atctcaaaa	tttgaatcat	ctggtcaaaa	ataaaaatga	atactgcatg	1080
gaggtcactc	ccaaaacgct	tgcagatgta	aaaggtggta	cacttatctc	ttatgaaggc	1140
agagttcagc	ttctagagat	tgcacagggt	ccagaggagc	atggtggcga	attcaaggcg	1200
attgaaaagt	tcaaaatctt	caataccaat	aatttatggg	tgaacttgaa	ggcgattaag	1260
aggcttgtgg	aggctgatgc	tcttaaaatg	gagataattc	ctaataccaaa	ggaagtggat	1320
ggggtaaaag	tgttccagct	tgaaacggct	gcagggtgctg	ctataagggt	ttttgatcgt	1380
gcaattgggtg	tcaatgttcc	aagatcacgc	tttctcccag	tgaaggcaac	ttcagattta	1440
ctacttgtgc	agtcggatct	ttacactgtg	gaggaagggt	ttgtcatccg	aaatcctgct	1500
agagtcacac	ctacaaatcc	caccattgag	ttgggtcctg	aattcaagaa	ggttggcaac	1560
tttctaaagc	gtttcaagtc	catacctagc	atcattgatc	ttgatagtct	aaaggtgtca	1620
ggtgatgtgt	ggtttggcag	tggagtcac	ctgaaggga	aagttataat	tgaagcaaag	1680
caggggggcta	cacttgagat	acctgatgaa	tctgtgatag	aaaacaagg	agtgagcagt	1740
cctgatgata	ttgtgaacta	gcttataagt	tttggcagtt	ggcattcttg	atttttgggt	1800
tgttttagta	gctagaatac	tgtgttttag	gcccttaaa	agtaggggtg	aagtttcacc	1860
tctggtttta	tcttccataa	tccttactgg	gaggggtttc	ataattttat	tataactagc	1920
cagtttctat	gtaaatgttg	agcgcggaat	tttatgcatg	aaagcctagg	atgaagcatc	1980
caaacacaat	aaataaatgg	tgctttgttg	agatttttta	aaaaaaaaa	aaaaaaaaa	2040
aaaaa						2045

<210> 81

<211> 139

<212> PRT

<213> *Eucalyptus grandis*

<400> 81

```

Phe Asp Phe Ala Arg Gly Tyr Ser Pro Lys Tyr Val Lys Glu Tyr Ile
 1          5          10          15
Glu Ser Ala Lys Pro Leu Phe Ser Val Gly Glu Tyr Trp Asp Ser Cys
          20          25          30
Asn Tyr Ser Gly Thr Thr Leu Glu Tyr Asn Gln Asp Ser His Arg Gln
          35          40          45
Arg Ile Val Asn Trp Ile Asp Gly Thr Gly Gln Leu Ser Ala Ala Phe
          50          55          60
Asp Phe Thr Thr Lys Gly Ile Leu Gln Glu Ala Val Lys Gly Gln Phe
          65          70          75          80
Trp Arg Leu Arg Asp Pro Lys Gly Lys Pro Pro Gly Val Met Gly Trp
          85          90          95
Trp Pro Ser Arg Ala Val Thr Phe Leu Asp Asn His Asp Thr Gly Ser
          100          105          110
Thr Gln Ala His Trp Pro Phe Pro Ser Asn His Ile Arg Arg Val Thr
          115          120          125
Arg Thr Tyr Ser Leu Ile Gln Glu Tyr Leu Leu
          130          135

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<210> 82

<211> 189

<212> PRT

<213> Eucalyptus grandis

<400> 82

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Leu Phe Trp Leu Phe Val Leu Leu Val Phe Tyr Leu Ala Ala Ser Ala
 1          5          10          15
Ser Pro Ala Leu Leu Phe Gln Gly Phe Asn Trp Glu Ser Trp Lys Lys
          20          25          30
Glu Gly Gly Trp Tyr Asn Ser Leu Lys Asn Leu Val Pro Asp Leu Ala
          35          40          45
Asn Ala Gly Ile Thr His Val Trp Leu Pro Pro Pro Ser Gln Ser Ala
          50          55          60
Ala Gln Gln Gly Tyr Leu Pro Gly Arg Leu Tyr Asp Leu Asn Ala Ser
          65          70          75          80
Ser Tyr Gly Asn Gln Asp Glu Leu Lys His Leu Ile Asp Ala Phe His
          85          90          95
Gln Lys Gly Ile Lys Cys Leu Ala Asp Ile Val Ile Asn His Arg Thr
          100          105          110
Ala Glu Lys Gln Asp Ser Arg Gly Ile Trp Cys Ile Phe Glu Gly Gly
          115          120          125
Thr Pro Asp Asp Arg Leu Asp Trp Gly Pro Ser Leu Ile Cys Arg Asp
          130          135          140
Asp Thr Glu Tyr Ser Asp Gly Arg Gly Asn Leu Asp Ser Gly Glu Asp
          145          150          155          160
Phe Lys Pro Ala Pro Asp Ile Asp His Leu Asn Pro Arg Val Gln Lys
          165          170          175
Glu Leu Ser Asp Trp Met Asn Trp Leu Lys Ser Asp Ile
          180          185

```

<210> 83

<211> 176

<212> PRT

<213> Eucalyptus grandis

<400> 83

```

Phe Gly Glu Phe Asn Thr Asp Glu Met Ala Gly Val Met Ala Ala Gly
 1           5           10           15
Val Ala Asn Leu Asn Val Leu Gly Arg Glu Thr Ala Glu Phe Thr Ser
           20           25           30
Phe Arg Pro Val Phe Leu Arg Gly Asn Ser Gln Gly Leu Ser Ser Ala
           35           40           45
Ser Ser Leu Cys Asp Tyr Arg Ile Phe Ala Asp Ser Lys Arg Lys Lys
           50           55           60
His Ala Ile Phe Arg Lys Gln Asn Ile Asn Arg Ser Thr Val Val Ser
65           70           75           80
Pro Arg Ala Val Ser Asp Thr Phe Ser Glu Leu Thr Cys Leu Asp Pro
           85           90           95
Val Ala Ser Arg Ser Val Leu Gly Ile Ile Leu Gly Gly Gly Ala Gly
           100          105          110
Thr Arg Leu Tyr Pro Leu Thr Lys Lys Arg Ala Lys Pro Ala Val Pro
           115          120          125
Leu Gly Ala Asn Tyr Arg Leu Ile Asp Ile Pro Val Ser Asn Cys Ile
           130          135          140
Asn Ser Asn Ile Ser Lys Ile Tyr Val Leu Thr Gln Phe Asn Ser Ala
145          150          155          160
Ser Leu Asn Pro Ser Ser Phe Thr Gly Leu Phe Lys His Met Gly Ser
           165          170          175

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<210> 84

<211> 47

<212> PRT

<213> Eucalyptus grandis

<400> 84

```

Asp Pro Ala Leu Asp Ser Ala Asp Ala Phe Lys Ser Val Arg Arg Asp
 1           5           10           15
Pro Asp Val Val Ser Pro Arg Asp Val Ser Asp Ser Arg Asn Ser Gln
           20           25           30
Thr Cys Leu Asn Pro Asp Ala Ser Arg Ser Val Leu Gly Ile Ile
           35           40           45

```

<210> 85

<211> 146

<212> PRT

<213> Eucalyptus grandis

<400> 85

```

Ala Pro Ala Leu Ala Ser Gly Ala Ala Ala Phe Lys Ser Val Arg Arg
 1           5           10           15
Ala Pro Ala Val Val Ser Pro Arg Ala Val Ser Asp Ser Arg Asn Ser
           20           25           30
Gln Thr Cys Leu Asp Pro Asp Ala Ser Arg Ser Val Leu Gly Ile Ile
           35           40           45
Leu Gly Gly Gly Ala Gly Thr Arg Leu Tyr Pro Leu Thr Lys Lys Arg
           50           55           60
Ala Lys Pro Ala Val Pro Leu Gly Ala Asn Tyr Arg Leu Ile Asp Ile
65           70           75           80
Pro Val Ser Asn Cys Leu Asn Ser Asn Val Ser Lys Ile Tyr Val Leu
           85           90           95
Thr Gln Phe Asn Ser Ala Ser Leu Asn Arg His Leu Ser Arg Ala Tyr
           100          105          110

```

Ala Ser Asn Met Gly Gly Tyr Lys Asn Glu Gly Phe Val Glu Val Leu
 115 120 125
 Ala Ala Gln Gln Ser Pro Glu Asn Pro Asn Trp Phe Gln Gly Thr Ala
 130 135 140
 Asp Ala
 145

<210> 86
 <211> 84
 <212> PRT
 <213> Eucalyptus grandis

<400> 86
 Glu Leu Thr Ala Met Asp Ser Arg Cys Val Ala Leu Lys Ala Asn Ala
 1 5 10 15
 Ser Leu Ala Gln Ser Asn Lys Ser Cys Leu Lys Asn Val Asp Lys Gly
 20 25 30
 Phe Leu Gly Glu Arg Ile Arg Gly Ser Leu Asp Asn Ser Val Trp Val
 35 40 45
 Lys Gln Val Ala Arg Asn Leu Arg Val Glu Lys Lys Phe Lys Lys Ala
 50 55 60
 Lys Pro Gly Val Ala Phe Ala Val Ile Thr Ser Asn Thr Val Ala Glu
 65 70 75 80
 Thr Leu Thr Ile

<210> 87
 <211> 113
 <212> PRT
 <213> Eucalyptus grandis

<400> 87
 Lys Ile Phe Ile Leu Thr Gln Phe Asn Ser Phe Ser Leu Asn Arg His
 1 5 10 15
 Leu Ser Arg Thr Tyr Asn Phe Asp Asn Gly Val Ser Phe Gly Asp Gly
 20 25 30
 Phe Val Glu Val Leu Ala Ala Thr Gln Thr Pro Gly Glu Ala Gly Lys
 35 40 45
 Arg Trp Phe Gln Gly Thr Ala Asp Ala Val Arg Gln Phe Ile Trp Val
 50 55 60
 Phe Glu Asp Ala Lys Asn Lys Asn Val Glu Asn Ile Leu Ile Leu Ser
 65 70 75 80
 Gly Asp His Leu Tyr Arg Met Asn Tyr Met Asp Phe Val Gln Lys His
 85 90 95
 Ile Asp Ser Asn Ala Asp Ile Thr Val Ser Cys Val Pro Met Asp Asp
 100 105 110
 Ser

<210> 88
 <211> 131
 <212> PRT
 <213> Eucalyptus grandis

<400> 88
 Ala Ile Ser Val Ala Cys Thr Pro Val Gly Glu Ser Arg Ala Ser Asp
 1 5 10 15

Tyr Gly Leu Val Lys Ile Asp Ser Arg Gly Gln Ile Val Gln Phe Ser
 20 25 30
 Glu Lys Pro Lys Gly Pro Asp Leu Thr Ala Met Gln Val Asp Thr Thr
 35 40 45
 Thr Leu Gly Leu Ser Pro Gln Glu Ala Ala Arg Ser Pro Tyr Ile Ala
 50 55 60
 Ser Met Gly Val Tyr Ala Phe Lys Thr Glu Ser Leu Leu Asn Leu Leu
 65 70 75 80
 Lys Trp Arg Tyr Pro Thr Ala Asn Asp Phe Gly Ser Glu Ile Ile Pro
 85 90 95
 Ser Ala Val Met Glu Gln Asp Val Gln Ala Tyr Ile Phe Arg Asp Tyr
 100 105 110
 Trp Glu Asp Ile Gly Thr Ile Lys Ser Phe Tyr Asp Ala Asn Leu Ala
 115 120 125
 Leu Thr Glu
 130

<210> 89

<211> 115

<212> PRT

<213> Eucalyptus grandis

<400> 89

Arg Leu Ser Ser Lys Phe Ile Trp Val Trp Leu Leu Leu Arg Trp Val
 1 5 10 15
 Arg Phe Val Gly Met Asp Ser Cys Phe Ala Ser Met Lys Val Gly Ala
 20 25 30
 Arg Pro Val Pro Gly Gly Gly Ile Asn Phe Ser Glu Phe Trp Gly
 35 40 45
 Glu Asn Leu Arg Val Gly Ala Asn Lys Gln Phe Gly Ala Arg Leu Cys
 50 55 60
 Lys Ser Leu Arg Ser Glu Thr Arg Ile Gly Arg Val Lys Pro Gly Ile
 65 70 75 80
 Ala Tyr Ser Val Leu Thr Pro Glu Val Asp Lys Glu Thr Met Thr Leu
 85 90 95
 Gln Ala Pro Val Leu Glu Thr Pro Arg Ala Asp Pro Lys Ser Phe Ala
 100 105 110
 Ser Ile Ile
 115

<210> 90

<211> 600

<212> PRT

<213> Eucalyptus grandis

<400> 90

Pro Gly Met Ile Gln Val Tyr Leu Gly Ser Ala Gly Ala Leu Asp Val
 1 5 10 15
 Glu Gly Lys Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg
 20 25 30
 Pro Gly Tyr Gln His His Lys Lys Ala Gly Ala Met Asn Ala Leu Val
 35 40 45
 Arg Val Ser Ala Val Leu Thr Asn Ala Pro Phe Leu Leu Asn Leu Asp
 50 55 60
 Cys Asp His Tyr Ile Asn Asn Ser Lys Ala Ile Arg Glu Ala Met Cys
 65 70 75 80
 Phe Leu Met Asp Pro Gln Leu Gly Lys Lys Leu Cys Tyr Val Gln Phe

44

Leu Tyr Pro Phe Leu Lys Gly Leu Met Gly Lys Gln Asn Arg Thr Pro
 545 550 555 560
 Thr Ile Val Val Leu Trp Ser Val Leu Leu Ala Ser Ile Phe Ser Leu
 565 570 575
 Val Trp Val Arg Ile Asp Pro Phe Leu Pro Lys Gln Thr Gly Pro Val
 580 585 590
 Leu Lys Pro Cys Gly Val Glu Cys
 595 600

<210> 91

<211> 222

<212> PRT

<213> Pinus radiata

<400> 91

Pro Asn Glu Phe Pro Leu Tyr Thr Thr Leu Glu Lys Lys Ser Leu Leu
 1 5 10 15
 Tyr Arg Ala Tyr Ser Cys Thr His Phe Cys Ala Ile Ile Gly Leu Ile
 20 25 30
 Cys Tyr Arg Leu Leu Tyr Ile Pro Ser Glu Asp Ser Trp Ser Trp Ile
 35 40 45
 Leu Ile Phe Val Ala Glu Leu Gly Phe Ser Tyr Ser Trp Ile Leu Asp
 50 55 60
 Gln Ala Leu Arg Trp Trp Pro Val Gln Arg Thr Val Phe Pro Lys Arg
 65 70 75 80
 Leu Ser Lys Arg Phe Gln Ser Asn Leu Pro Pro Val Asp Ile Phe Ile
 85 90 95
 Cys Thr Ala Asp Pro Phe Lys Glu Pro Pro Leu Thr Val Ile Asn Thr
 100 105 110
 Val Leu Ser Ala Leu Ala Val His Tyr Pro Met Gly Lys Leu Ser Cys
 115 120 125
 Tyr Val Ser Asp Asp Gly Gly Ser Pro Leu Thr Phe Tyr Ala Leu Leu
 130 135 140
 Glu Ala Ser Arg Phe Ala Lys Ile Trp Ile Pro Phe Cys Asp Lys Tyr
 145 150 155 160
 Ser Ile Glu Asp Arg Cys Pro Glu Val Tyr Phe Ser Asn Pro Ser Ala
 165 170 175
 Leu Glu Asn Val Asn Leu Ser Phe Met Thr Asp Trp Arg His Val Asn
 180 185 190
 Lys Met Tyr Phe Glu Leu Lys Asp Arg Ile Asn Asn Val Met Glu Met
 195 200 205
 Gly Ser Val His Gln Ile Asn Arg Met Asn Thr Lys Asp Ser
 210 215 220

<210> 92

<211> 121

<212> PRT

<213> Pinus radiata

<400> 92

Ser Lys Leu Leu Met Glu Pro Asn Asp Phe Pro Leu Tyr Thr Thr Leu
 1 5 10 15
 Glu Lys Lys Ser Leu Leu Tyr Arg Ala Tyr Ser Cys Thr His Phe Ser
 20 25 30
 Ala Ile Ile Gly Leu Ile Cys Tyr Arg Leu Leu Tyr Ile Pro Ser Glu
 35 40 45
 Asp Ser Trp Pro Trp Ile Leu Ile Phe Val Ala Glu Leu Gly Phe Ser

50 55 60
 Tyr Ser Trp Ile Leu Asp Gln Ala Leu Arg Trp Trp Pro Val Glu Arg
 65 70 75 80
 Thr Val Phe Pro Asn Arg Leu Ser Lys Arg Phe Gln Ser Lys Leu Pro
 85 90 95
 Pro Val Asp Ile Phe Ile Cys Thr Ala Asp Pro Phe Lys Glu Pro Pro
 100 105 110
 Leu Thr Val Ile Asn Thr Val Leu Ser
 115 120

<210> 93

<211> 603

<212> PRT

<213> Pinus radiata

<400> 93

Leu Lys Phe Phe Glu Phe Gly Arg Glu Leu Asn Leu Thr Met Glu Ala
 1 5 10 15
 Ser Ala Gly Leu Val Ala Gly Ser His Asn Arg Asn Glu Phe Val Val
 20 25 30
 Ile His Gly His Glu Glu Pro Lys Pro Leu Asn Thr Leu Ser Gly His
 35 40 45
 Val Cys Gln Ile Cys Gly Glu Asp Val Gly Leu Asn Thr Asp Gly Glu
 50 55 60
 Leu Phe Val Ala Cys Asn Glu Cys Gly Phe Pro Val Cys Arg Pro Cys
 65 70 75 80
 Tyr Glu Tyr Glu Arg Arg Glu Gly Asn Gln Ser Cys Pro Gln Cys Asn
 85 90 95
 Thr Arg Tyr Lys Arg Gln Lys Gly Ser Pro Arg Val Glu Gly Asp Asp
 100 105 110
 Asp Glu Glu Asp Val Asp Asp Ile Glu His Glu Phe Asn Val Glu Thr
 115 120 125
 Gln Gln Arg Asn Arg Gln Gln Ile Thr Glu Ala Met Leu His Gly Arg
 130 135 140
 Met Ser Tyr Gly Arg Gly Pro Asp Asp Glu Asn Ser Gln Ile Ala His
 145 150 155 160
 Asn Pro Glu Leu Pro Pro Gln Ile Pro Val Leu Ala Asn Gly His Ser
 165 170 175
 Val Val Ser Gly Glu Ile Pro Thr Ser Tyr Tyr Ala Asp Asn Gln Leu
 180 185 190
 Leu Ala Asn Pro Ala Met Leu Lys Arg Val His Pro Ser Ser Glu Pro
 195 200 205
 Gly Ser Gly Arg Ile Ile Met Asp Pro Asn Arg Asp Ile Gly Ser Tyr
 210 215 220
 Gly Phe Gly Asn Val Ser Trp Lys Glu Arg Gly Asp Gly Tyr Lys Ser
 225 230 235 240
 Lys Glu Asn Lys Ser Gly Gln Leu Asp Met Thr Glu Gly Arg Tyr Gln
 245 250 255
 Tyr Asn Gly Gly Phe Ala Pro Asn Glu Pro Glu Asp Tyr Ile Asp Pro
 260 265 270
 Asp Met Pro Met Thr Asp Glu Ala Arg Gln Pro Leu Ser Arg Lys Val
 275 280 285
 Pro Ile Pro Ser Ser Lys Ile Asn Pro Tyr Arg Met Val Ile Val Ile
 290 295 300
 Arg Leu Ile Val Leu Gly Ile Phe Leu Arg Tyr Arg Leu Leu Asn Pro
 305 310 315 320
 Val Lys Asn Ala Tyr Gly Leu Trp Ala Thr Ser Ile Val Cys Glu Ile

325 330 335
 Trp Phe Ala Leu Ser Trp Ile Leu Asp Gln Phe Pro Lys Trp Leu Pro
 340 345 350
 Ile Ser Arg Glu Thr Tyr Leu Asp Arg Leu Ser Leu Arg Tyr Glu Arg
 355 360 365
 Glu Gly Glu Pro Ser Met Leu Ala Pro Val Asp Leu Phe Val Ser Thr
 370 375 380
 Val Asp Pro Leu Lys Glu Pro Pro Leu Val Thr Ala Asn Thr Val Leu
 385 390 395 400
 Ser Ile Leu Ser Val Asp Tyr Pro Val Asp Asn Val Ser Cys Tyr Val
 405 410 415
 Ser Asp Asp Gly Ala Ser Met Leu Thr Phe Glu Ser Leu Ser Glu Thr
 420 425 430
 Ser Glu Phe Ala Arg Lys Trp Val Pro Phe Cys Lys Lys Phe Asp Ile
 435 440 445
 Glu Pro Arg Ala Pro Glu Ile Tyr Phe Ser Gln Lys Ile Asp Tyr Leu
 450 455 460
 Lys Asp Lys Phe Gln Pro Thr Phe Val Lys Glu Arg Arg Ala Met Lys
 465 470 475 480
 Arg Glu Tyr Glu Glu Phe Lys Val Arg Ile Asn Arg Leu Val Ala Lys
 485 490 495
 Ala Ser Lys Val Pro Lys Glu Gly Trp Thr Met Gln Asp Gly Thr Pro
 500 505 510
 Trp Pro Gly Asn Asn Thr Arg Asp His Pro Gly Met Ile Gln Val Phe
 515 520 525
 Leu Gly His Ser Gly Gly Leu Asp Thr Glu Gly Asn Glu Leu Pro Arg
 530 535 540
 Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Phe Gln His His Lys
 545 550 555 560
 Lys Ala Gly Ala Met Asn Ala Leu Val Arg Val Ser Ala Val Leu Thr
 565 570 575
 Asn Ala Pro Phe Met Leu Asn Leu Asp Cys Asp His Tyr Ile Asn Asn
 580 585 590
 Ser Lys Ala Ile Arg Glu Gly Met Cys Phe Met
 595 600

<210> 94

<211> 245

<212> PRT

<213> Pinus radiata

<400> 94

Asn His Ile Lys Leu Leu Pro Phe Ala Gln Glu Gln Asn Asp Glu Ile
 1 5 10 15
 Met Glu Ala Arg Ala Gly Leu Val Ala Gly Ser Tyr Lys Arg Asn Glu
 20 25 30
 Leu Met Val Val Pro Gly His Asp Gly Pro Lys Pro Ile Arg Leu Ser
 35 40 45
 Thr Leu Gln Asp Cys Gln Val Cys Gly Asp Lys Ile Gly Cys Asn Pro
 50 55 60
 Asn Gly Glu Leu Phe Val Ala Cys Asn Glu Cys Gly Phe Pro Val Cys
 65 70 75 80
 Arg Pro Cys Tyr Glu Tyr Glu Arg Lys Asp Gly Asn Arg Cys Cys Pro
 85 90 95
 Gln Cys Lys Thr Arg Tyr Arg Arg His Lys Gly Ser Pro Arg Val Glu
 100 105 110
 Gly Asp Asp Glu Glu Asp Gly Met Asp Asp Leu Glu Gln Glu Phe Asn


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      115      120      125
Met Glu Arg Asp Arg Gln Ser Val Val Ser His Arg Gly Asn Ala Phe
  130      135      140
Asp Ala Thr Pro Arg Ala Ala His Ser Ile Ala Asn Arg Ser Ile Asn
  145      150      155      160
Gly Asp Asn Tyr Ala Leu Ser Leu Pro Pro Ile Met Asp Gly Asp Ser
      165      170      175
Leu Ser Val Gln Arg Phe Pro His Ala Ala Thr Val Ile Gly Asn Gly
      180      185      190
Leu Asp Pro Val Lys Glu Asn Tyr Gly Ser Ala Ala Trp Lys Glu Arg
      195      200      205
Val Glu Asn Trp Lys Ala Lys His Asp Lys Lys Ser Gly Ser Ile Lys
      210      215      220
Asp Gly Ile Tyr Asp Pro Asp Glu Ala Asp Asp Ile Met Met Thr Glu
  225      230      235      240
Ala Glu Ala Arg Gln
      245

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<210> 95
<211> 149
<212> PRT
<213> Eucalyptus grandis

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      <400> 95
Leu Glu Arg Val Ser Gly Thr Glu His Ser His Ile Leu Arg Val Pro
  1      5      10      15
Phe Arg Ser Asp Gln Gly Ile Leu Arg Lys Trp Ile Ser Arg Phe Asp
      20      25      30
Val Trp Pro Tyr Leu Glu Thr Phe Ala Leu Asp Ala Ala His Glu Ile
      35      40      45
Thr Ala Glu Leu Gln Gly Phe Pro Asp Phe Ile Ile Gly Asn Tyr Ser
      50      55      60
Asp Gly Asn Leu Val Ala Ser Leu Leu Ala Tyr Lys Met Gly Val Thr
  65      70      75      80
Gln Cys Thr Ile Ala His Ala Leu Glu Lys Thr Lys Tyr Pro Asp Ser
      85      90      95
Asp Ile Tyr Trp Lys Lys Phe Asp Glu Lys Tyr His Phe Ser Cys Gln
      100      105      110
Phe Thr Ala Asp Leu Leu Ala Met Asn Asn Ala Asp Phe Ile Ile Thr
      115      120      125
Ser Thr Tyr Gln Glu Ile Ala Gly Thr Lys Asn Thr Val Gly Gln Tyr
  130      135      140
Glu Ser His Thr Ala
  145

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<210> 96
<211> 124
<212> PRT
<213> Eucalyptus grandis

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      <400> 96
Leu Ala Lys Ala Gly Thr Lys Asn Thr Val Gly Gln Tyr Glu Ser His
  1      5      10      15
Thr Ala Phe Thr Leu Pro Gly Leu Tyr Arg Val Val His Gly Ile Asp
      20      25      30
Val Phe Asp Pro Lys Phe Asn Ile Val Ser Pro Gly Ala Asp Met Cys
      35      40      45

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```

Ile Tyr Phe Pro Tyr Ser Glu Lys Gln Lys Arg Leu Thr Ala Leu His
 50          55          60
Gly Ser Ile Glu Lys Leu Leu Tyr Asp Pro Glu Gln Asn Asp Glu His
65          70          75          80
Ile Gly Ser Leu Ser Asp Arg Ser Lys Pro Met Ile Phe Ser Met Ala
          85          90          95
Arg Leu Asp Lys Val Lys Asn Met Thr Gly Leu Val Glu Cys Tyr Ala
          100          105          110
Lys Asn Ser Lys Leu Arg Glu Leu Ala Asn Leu Val
          115          120

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<210> 97
<211> 61
<212> PRT
<213> Eucalyptus grandis

```

```

<400> 97
Glu Ala Ile Val Leu Pro Pro Phe Val Ala Ile Ala Val Arg Pro Arg
 1          5          10          15
Pro Gly Val Trp Glu Tyr Val Arg Val Asn Val His Glu Leu Ser Val
          20          25          30
Glu Gln Leu Thr Val Ser Glu Tyr Leu Gly Phe Lys Glu Glu Leu Val
          35          40          45
Asp Gly Lys Ser Glu Asp Ser Phe Val Leu Glu Leu Asp
          50          55          60

```

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<210> 98
<211> 217
<212> PRT
<213> Pinus radiata

```

```

<400> 98
Cys Val Gly Ile Asp Pro Lys Ala Asn Met Val Ser Ala Arg Leu Thr
 1          5          10          15
Arg Ser Leu Ser Ser Arg Glu Arg Val Glu Asp Thr Leu Ser Glu His
          20          25          30
Arg Asn Gln Leu Ala Ala Leu Phe Ser Arg Tyr Val Ala Gln Gly Lys
          35          40          45
Lys Val Leu Gln Pro His Glu Ile Leu Asp Gly Leu Ala Ala Val Ile
          50          55          60
Gly Glu Asn Asp Glu His Gln Asn Phe Arg Asp Gly Leu Phe Gly Asn
65          70          75          80
Val Leu Arg Ser Thr Gln Glu Ala Ile Ile Ile Pro Pro Trp Val Val
          85          90          95
Leu Ala Val Arg Pro Arg Pro Gly Val Trp Glu Phe Val Arg Val Asn
          100          105          110
Val Asp Glu Leu Ala Val Glu Gln Leu Ser Val Ala Glu Tyr Leu Glu
          115          120          125
Phe Lys Glu Gln Leu Val Asp Gly Ser Val Lys Asp Asn Tyr Val Leu
          130          135          140
Glu Leu Asp Leu Glu Pro Phe Asn Ala Ser Phe Pro Arg Pro Thr Gln
          145          150          155          160
Pro Ser Ser Ile Gly Ser Gly Val Gln Phe Leu Asn Arg His Leu Ser
          165          170          175
Ser Arg Leu Phe Arg Asp His Glu Ser Met Gln Pro Leu Leu Asp Phe
          180          185          190
Leu Arg Ala His Lys Tyr Gln Gly Gln Arg Leu Met Leu Asn Glu Arg

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195						200						205					
Ile	Gln	Ser	Leu	Thr	Lys	Leu	Arg	Ser									
210						215											
<210> 99																	
<211> 348																	
<212> PRT																	
<213> Pinus radiata																	
<400> 99																	
Gly	Thr	Lys	Ser	Trp	Ser	Ser	Arg	Ala	Cys	Arg	Ser	Thr	Leu	Val	Asp		
1				5					10					15			
Pro	Lys	Asn	Ser	Ala	Arg	Asp	Gly	Ile	Asp	Val	Phe	Asp	Pro	Lys	Phe		
			20					25					30				
Asn	Ile	Val	Ser	Pro	Gly	Ala	Asp	Met	Gln	Ile	Tyr	Phe	Pro	Tyr	Thr		
		35					40					45					
Glu	Lys	Gln	His	Arg	Leu	Thr	Thr	Leu	His	Gly	Thr	Ile	Glu	Glu	Leu		
	50					55					60						
Leu	Phe	Ser	Pro	Glu	Gln	Thr	Ala	Glu	His	Met	Cys	Ala	Leu	Asn	Asp		
65					70					75					80		
Arg	Lys	Lys	Pro	Ile	Ile	Phe	Ser	Met	Ala	Arg	Leu	Asp	Arg	Val	Lys		
				85					90					95			
Asn	Met	Thr	Gly	Leu	Val	Glu	Trp	Phe	Ala	Lys	Ser	Lys	Arg	Leu	Arg		
			100					105					110				
Glu	Leu	Val	Asn	Leu	Val	Val	Val	Ala	Gly	Asp	Ile	Asp	Pro	Ser	Lys		
		115					120					125					
Ser	Lys	Asp	Arg	Glu	Glu	Val	Ala	Glu	Ile	Glu	Lys	Met	His	Arg	Leu		
		130					135				140						
Val	Lys	Glu	Tyr	Asn	Leu	Asn	Gly	Gln	Phe	Arg	Trp	Ile	Cys	Ala	Gln		
145					150					155					160		
Lys	Asn	Arg	Val	Arg	Asn	Gly	Glu	Leu	Tyr	Arg	Tyr	Ile	Cys	Asp	Thr		
				165					170					175			
Arg	Gly	Ala	Phe	Val	Gln	Pro	Ala	Leu	Tyr	Glu	Ala	Phe	Gly	Leu	Thr		
			180					185					190				
Val	Val	Glu	Ala	Met	Thr	Cys	Gly	Leu	Pro	Thr	Phe	Ala	Thr	Cys	Asn		
		195					200					205					
Gly	Gly	Pro	Ala	Glu	Ile	Ile	Val	Asp	Gly	Val	Ser	Gly	Phe	His	Ile		
	210						215				220						
Asp	Pro	Tyr	His	Gly	Val	Ser	Ala	Thr	Glu	Arg	Ile	Ala	Asp	Phe	Phe		
225					230					235					240		
Glu	Lys	Cys	Lys	Thr	Asp	Pro	Ser	His	Trp	Glu	Lys	Ile	Ser	Asn	Gly		
				245					250					255			
Gly	Leu	Gln	Arg	Ile	Tyr	Glu	Lys	Tyr	Thr	Trp	Gln	Ile	Tyr	Ala	Asp		
			260					265					270				
Arg	Leu	Met	Thr	Leu	Ser	Gly	Val	Tyr	Gly	Phe	Trp	Lys	Tyr	Val	Ser		
		275					280					285					
Lys	Leu	Glu	Arg	Arg	Glu	Thr	Arg	Arg	Tyr	Leu	Glu	Met	Phe	Tyr	Ser		
	290						295				300						
Leu	Lys																

```
<210> 100
<211> 139
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<212> PRT

<213> Pinus radiata

<400> 100

```

Ser Asn Leu Glu Thr Phe Leu Gly Arg Val Pro Met Val Phe Asn Val
 1           5           10           15
Val Ile Leu Ser Pro His Gly Tyr Phe Gly Gln Ala Asn Val Leu Gly
          20           25           30
Met Pro Asp Thr Gly Gly Gln Val Val Tyr Ile Leu Asp Gln Cys Arg
          35           40           45
Ala Leu Glu Asn Glu Met Leu Leu Arg Ile Lys Gln Gln Gly Leu Asp
          50           55           60
Ile Thr Pro Glu Ile Ile Val Val Thr Arg Leu Ile Pro Glu Ala His
65           70           75           80
Gly Thr Thr Cys Asn Gln Arg Leu Glu Lys Ile Ser Gly Thr Gln His
          85           90           95
Ser Arg Ile Leu Arg Val Pro Phe Arg Thr Glu Lys Gly Val Val Arg
          100          105          110
Asp Trp Val Ser Arg Phe Asp Val Trp Pro Tyr Leu Glu Arg Phe Ser
          115          120          125
Glu Asp Val Thr Asn Glu Ile Ala Val Glu Leu
          130          135

```

<210> 101

<211> 68

<212> PRT

<213> Pinus radiata

<400> 101

```

Ile Leu Leu Leu Ile Val Gly Ile Gly Ile His Ile Lys Ala Lys Glu
 1           5           10           15
Asn Met Val Ala Ala Ala Leu Thr His Ala Leu Ser Ser Arg Glu Arg
          20           25           30
Val Glu Asp Met Leu Ser Glu His Arg Asn Glu Ile Val Ser Leu Leu
          35           40           45
Ser Arg Tyr Val Ala Glu Gly Lys Lys Ile Leu Gln Pro His Gln Leu
          50           55           60
Leu Asp Gly Leu
65

```

<210> 102

<211> 70

<212> PRT

<213> Eucalyptus grandis

<400> 102

```

Met Ala Ala Pro Lys Leu Gly Arg Ile Pro Ser Ile Arg Asp Arg Val
 1           5           10           15
Glu Asp Thr Leu Ala Ala His Arg Asn Glu Leu Val Ser Leu Leu Ser
          20           25           30
Arg Tyr Val Ala Gln Gly Lys Gly Ile Leu Gln Pro His His Leu Leu
          35           40           45
Asp Glu Leu Glu Asn Ile Ile Ser Glu Asp Glu Gly Lys Ser Ser Leu
          50           55           60
Ser Asp Gly Pro Phe Ser
65           70

```

<210> 103
 <211> 534
 <212> PRT
 <213> Eucalyptus grandis

<400> 103

Val	Leu	Phe	Thr	His	Leu	Pro	Pro	Gln	Lys	Pro	Asn	Arg	Ile	Ser	Leu
1				5					10					15	
Leu	Leu	Phe	Phe	Ile	Phe	His	Ile	Thr	Thr	Phe	Leu	Leu	Leu	Leu	Leu
			20					25					30		
Leu	Leu	Ser	Val	Leu	Ser	Thr	Phe	Ile	Ser	Ile	Ala	Val	Ser	Leu	Ser
		35					40					45			
Asp	Pro	Glu	Leu	Phe	Phe	Ala	Ser	Pro	Pro	Met	Ala	Ala	Ala	Ala	Thr
		50				55					60				
Leu	Ser	Ala	Pro	Asp	Ala	Ala	Lys	Leu	Ser	Gln	Leu	Lys	Ser	Ala	Val
65					70					75					80
Ser	Gly	Leu	Gly	Gln	Ile	Ser	Glu	Ser	Glu	Lys	Asn	Gly	Phe	Ile	Asn
				85					90					95	
Leu	Val	Ser	Arg	Tyr	Leu	Ser	Gly	Glu	Ala	Gln	His	Val	Asp	Trp	Ser
			100					105					110		
Lys	Ile	Gln	Thr	Pro	Thr	Asp	Glu	Ile	Val	Val	Pro	Tyr	Asp	Ser	Leu
		115					120						125		
Ala	Pro	Thr	Pro	Gln	Asp	Pro	Ala	Ala	Thr	Lys	Ser	Leu	Leu	Asp	Lys
		130				135						140			
Leu	Val	Val	Leu	Lys	Leu	Asn	Gly	Gly	Leu	Gly	Thr	Thr	Met	Gly	Cys
145					150					155					160
Thr	Gly	Pro	Lys	Ser	Val	Ile	Glu	Val	Arg	Asn	Gly	Leu	Thr	Phe	Leu
				165					170					175	
Asp	Leu	Ile	Val	Ile	Gln	Ile	Glu	Asn	Leu	Asn	Thr	Lys	Tyr	Gly	Cys
			180					185					190		
Asn	Val	Pro	Leu	Leu	Leu	Met	Asn	Ser	Phe	Asn	Thr	His	Asp	Asp	Thr
		195					200					205			
Leu	Lys	Ile	Val	Glu	Lys	Tyr	Ala	Asn	Ser	Asn	Ile	Asp	Ile	His	Thr
		210				215					220				
Phe	Asn	Gln	Ser	Gln	Tyr	Pro	Arg	Leu	Val	Val	Glu	Asp	Phe	Met	Pro
225					230					235					240
Leu	Pro	Cys	Lys	Gly	Gln	Thr	Gly	Lys	Asp	Gly	Trp	Tyr	Pro	Pro	Gly
				245					250					255	
His	Gly	Asp	Val	Phe	Ala	Ser	Leu	Met	Asn	Ser	Gly	Lys	Leu	Asp	Ala
			260					265					270		
Leu	Leu	Ser	Gln	Gly	Lys	Glu	Tyr	Val	Phe	Ala	Ala	Asn	Ser	Asp	Asn
		275					280					285			
Leu	Gly	Ala	Ile	Val	Asp	Leu	Lys	Ile	Leu	Asn	His	Leu	Met	Thr	Asn
		290				295					300				
Lys	Asn	Glu	Tyr	Cys	Met	Glu	Val	Thr	Pro	Lys	Thr	Leu	Ala	Asp	Val
305					310					315					320
Lys	Gly	Gly	Thr	Leu	Ile	Ser	Tyr	Glu	Gly	Lys	Val	Gln	Leu	Leu	Glu
				325					330					335	
Ile	Ala	Gln	Val	Pro	Asp	Glu	His	Ile	Asn	Glu	Phe	Lys	Ser	Ile	Glu
			340					345					350		
Lys	Phe	Lys	Ile	Phe	Asn	Thr	Asn	Asn	Leu	Trp	Val	Asn	Leu	Lys	Ala
		355					360					365			
Ile	Lys	Arg	Leu	Val	Glu	Ala	Gln	Ala	Leu	Lys	Met	Glu	Ile	Ile	Pro
		370				375					380				
Asn	Pro	Lys	Glu	Val	Asp	Gly	Ile	Lys	Val	Leu	Gln	Leu	Glu	Thr	Ala
385					390					395					400
Ala	Gly	Ala	Ala	Ile	Lys	Phe	Phe	Asp	Asn	Ala	Ile	Gly	Ile	Asn	Val

405 410 415
 Pro Arg Ser Arg Phe Leu Pro Val Lys Ala Thr Ser Asp Leu Leu Leu
 420 425 430
 Val Gln Ser Asp Leu Tyr Thr Leu Val Asp Gly Phe Val Glu Arg Asn
 435 440 445
 Lys Ala Arg Thr Asn Pro Ser Asn Pro Ser Ile Glu Leu Gly Pro Glu
 450 455 460
 Phe Lys Lys Val Gly Asn Phe Leu Ser Arg Phe Lys Ser Ile Pro Ser
 465 470 475 480
 Ile Ile Glu Leu Asp Ser Leu Lys Val Ser Gly Asp Val Trp Phe Gly
 485 490 495
 Thr Gly Ile Thr Leu Lys Gly Lys Val Thr Ile Ala Ala Lys Pro Gly
 500 505 510
 Val Lys Leu Glu Ile Pro Asp Gly Val Val Leu Glu Asn Lys Glu Ile
 515 520 525
 His Gly Pro Glu Asp Leu
 530

<210> 104
 <211> 480
 <212> PRT
 <213> Pinus radiata

<400> 104
 Met Ala Ala Ala Pro Ala Val Ala Ser Pro Ala Ala Glu Thr Asp Arg
 1 5 10 15
 Ile Pro Lys Leu Gln Ala Glu Val Thr Lys Leu Asn Gln Ile Ser Asp
 20 25 30
 Asn Glu Lys Glu Gly Phe Val Arg Leu Val Ser Arg Tyr Leu Ser Gly
 35 40 45
 Glu Glu Glu Lys Ile Glu Trp Glu Lys Ile Lys Thr Pro Thr Asp Glu
 50 55 60
 Ile Val Val Pro Tyr Asp Thr Leu Ala Ala Leu Gly Glu Asp Pro Ser
 65 70 75 80
 Glu Thr Lys Glu Leu Leu Asp Lys Leu Val Val Leu Lys Leu Asn Gly
 85 90 95
 Gly Leu Gly Thr Thr Met Gly Cys Thr Gly Pro Lys Ser Val Ile Glu
 100 105 110
 Val Arg Asn Gly Leu Thr Phe Leu Asp Leu Ile Val Lys Gln Ile Glu
 115 120 125
 Ser Leu Asn Asn Lys Tyr Asp Ser Lys Val Pro Leu Val Leu Met Asn
 130 135 140
 Ser Phe Asn Thr His Asp Asp Thr Ile Lys Ile Val Glu Lys Tyr Ser
 145 150 155 160
 Gly Ser Asn Ile Asp Ile His Ile Phe Asn Gln Ser Gln Tyr Pro Arg
 165 170 175
 Met Val Ala Glu Asp Leu Thr Pro Trp Pro Thr Lys Gly Arg Thr Asp
 180 185 190
 Lys Glu Ala Trp Tyr Pro Pro Gly His Gly Asp Val Phe Pro Ala Leu
 195 200 205
 Leu Asn Ser Gly Lys Leu Asp Glu Leu Leu Ser Gln Gly Lys Glu Tyr
 210 215 220
 Val Phe Ile Ala Asn Ser Asp Asn Leu Gly Ala Ile Val Asp Leu Lys
 225 230 235 240
 Ile Leu Asn His Leu Val Lys Asn Lys Asn Glu Tyr Cys Met Glu Val
 245 250 255
 Thr Pro Lys Thr Leu Ala Asp Val Lys Gly Gly Thr Leu Ile Ser Tyr

	260		265		270
Glu Gly Arg Val Gln Leu Leu Glu Ile Ala Gln Val Pro Glu Glu His					
275			280		285
Val Gly Glu Phe Lys Ser Ile Glu Lys Phe Lys Ile Phe Asn Thr Asn					
290			295		300
Asn Leu Trp Val Asn Leu Lys Ala Ile Lys Arg Leu Val Glu Ala Asp					
305			310		315
Ala Leu Lys Met Glu Ile Ile Pro Asn Pro Lys Glu Val Asp Gly Val					
	325		330		335
Lys Val Leu Gln Leu Glu Thr Ala Ala Gly Ala Ala Ile Arg Phe Phe					
	340		345		350
Asp Arg Ala Ile Gly Val Asn Val Pro Arg Ser Arg Phe Leu Pro Val					
	355		360		365
Lys Ala Thr Ser Asp Leu Leu Leu Val Gln Ser Asp Leu Tyr Thr Val					
	370		375		380
Glu Glu Gly Phe Val Ile Arg Asn Pro Ala Arg Val Asn Pro Thr Asn					
385			390		395
Pro Thr Ile Glu Leu Gly Pro Glu Phe Lys Lys Val Gly Asn Phe Leu					
	405		410		415
Lys Arg Phe Lys Ser Ile Pro Ser Ile Ile Asp Leu Asp Ser Leu Lys					
	420		425		430
Val Ser Gly Asp Val Trp Phe Gly Ser Gly Val Ile Leu Lys Gly Lys					
	435		440		445
Val Ile Ile Glu Ala Lys Gln Gly Ala Thr Leu Glu Ile Pro Asp Glu					
	450		455		460
Ser Val Ile Glu Asn Lys Val Val Ser Ser Pro Asp Asp Ile Val Asn					
465		470		475	480

<210> 105

<211> 573

<212> DNA

<213> Eucalyptus grandis

<400> 105

ctcactcgat ctcgaaggcc agaaggggga ggccgagcct cttgcttttt ttcgtgtata	60
aaagggcctc cccatttcct cattttttcac catcctccgt tcgttcgttc ccttcctttt	120
ccattgtttgc gtttaagccc tccaattttc ttttggcgtc ccgttttttg ggctcccttg	180
aagatctcct cttcatttcg ggatttcctg ccttcgcccgc gccatttgaa gttctttttc	240
tgagagaaga atttagacat ggctgatecg atgctgactc gaagccacag ccttcgcgag	300
cgtttgacg agaccctctc tgcacccgc aacgatattg tggccttcct ttcaaggggtt	360
gaagccaagg gcaaaggcat cttgcagcgc caccagattt ttgctgagtt tgaggccatc	420
tctgaggaga gcagagcaaa gcttcttgat ggggcctttg gtgaagtcc caaatccact	480
caggaagcga ttgtgtcgcc tccatgggtt gctcttgctg ttcgtccaag gccgggcgtg	540
tgggagcaca tccgtgtgaa cgtccatgcg ctt	573

<210> 106

<211> 105

<212> PRT

<213> Eucalyptus grandis

<400> 106

Met Ala Asp Arg Met Leu Thr Arg Ser His Ser Leu Arg Glu Arg Leu

```

1           5           10           15
Asp Glu Thr Leu Ser Ala His Arg Asn Asp Ile Val Ala Phe Leu Ser
           20           25           30
Arg Val Glu Ala Lys Gly Lys Gly Ile Leu Gln Arg His Gln Ile Phe
           35           40           45
Ala Glu Phe Glu Ala Ile Ser Glu Glu Ser Arg Ala Lys Leu Leu Asp
           50           55           60
Gly Ala Phe Gly Glu Val Leu Lys Ser Thr Gln Glu Ala Ile Val Ser
65           70           75           80
Pro Pro Trp Val Ala Leu Ala Val Arg Pro Arg Pro Gly Val Trp Glu
           85           90           95
His Ile Arg Val Asn Val His Ala Leu
           100           105

```

<210> 107
 <211> 664
 <212> DNA
 <213> Eucalyptus grandis

```

<400> 107
ggcacgagct cttctcgtct cgcttttctca tataaagaag tgaaagaata cgaggatact      60
ccacttgggt atcgccaaga actcattggg tcgcgagaag attggccaac atgatggaat      120
ccggggttcc cctgtgcaac acttgcgag aggctgttgg ggttgatgag aaaggcgagg      180
tcttcgtggc ttgtcaagag tgcaacttcg ccatttgcaa ggcttgtgtc gaatatgaga      240
ttaaggaagg aagaaaagcg tgcttgcgct gtggcactcc atttgaagcg aactcgatgg      300
ctgatgctga gagaaatgaa ttgggaagtc gatcgacaat ggcagctcaa ctcaatgatc      360
ctcaggacac agggattcat gctagacaca tcagcagtgt ttctacgttg gatagtgaat      420
acaatgatga gactgggaac cctatctgga agaataagat ggagagctgg aaggacaaaa      480
agaataagaa gaagaaggcc ccgacgaagg ctgagaaaga ggctcaagtt ccaccagagc      540
agcagatgga agagaagcaa attgctgatg cttcagagcc actctcgacc gttattccca      600
ttgccaaaag caaactcgca ccataccgaa ccgtaataat aatgcgattg atcattttgg      660
cact                                                                 664

```

<210> 108
 <211> 184
 <212> PRT
 <213> Eucalyptus grandis

```

<400> 108
Met Met Glu Ser Gly Val Pro Leu Cys Asn Thr Cys Gly Glu Ala Val
1           5           10           15
Gly Val Asp Glu Lys Gly Glu Val Phe Val Ala Cys Gln Glu Cys Asn
           20           25           30
Phe Ala Ile Cys Lys Ala Cys Val Glu Tyr Glu Ile Lys Glu Gly Arg
           35           40           45
Lys Ala Cys Leu Arg Cys Gly Thr Pro Phe Glu Ala Asn Ser Met Ala
           50           55           60
Asp Ala Glu Arg Asn Glu Leu Gly Ser Arg Ser Thr Met Ala Ala Gln
65           70           75           80
Leu Asn Asp Pro Gln Asp Thr Gly Ile His Ala Arg His Ile Ser Ser
           85           90           95
Val Ser Thr Leu Asp Ser Glu Tyr Asn Asp Glu Thr Gly Asn Pro Ile
           100           105           110
Trp Lys Asn Arg Val Glu Ser Trp Lys Asp Lys Lys Asn Lys Lys Lys
           115           120           125
Lys Ala Pro Thr Lys Ala Glu Lys Glu Ala Gln Val Pro Pro Glu Gln
           130           135           140

```


[illegible]

```
<210> 109
<211> 1293
<212> DNA
<213> Pinus radiata
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<400> 109

ctgactctct	ctctctctgt	tttgtctcct	ccctcctctc	tctcgttttc	gcttcgctgt	60
gaacgcaccc	acacgatctt	ccattccctc	aacaatgtcg	actctcaccg	ttccgcagcc	120
actgccccct	gtagccgatg	actgcgagca	gctccggaca	gccttcgcag	gatggggaac	180
aaatgagaag	ctgatcatat	ccatattggg	tcataggaat	gcggcgcgaga	ggaagctgat	240
tcggcaaacc	tatgccgaga	cttacggcga	ggacctcctc	aaggcattgg	acagagaact	300
taccaatgat	ttcgagaggc	tggtggctct	ttggtcactt	gatccggctg	aacgtgatgc	360
gtacttgggc	aatgaagcga	cgaaaagatg	gacttcaagc	aaccaggttc	tcatggaaat	420
agcctgcacg	aggtctccgc	agcagttgct	tatggcaaga	caagcatatc	atgcccgata	480
caagaagtca	atggaagagg	acgtcgctca	ccacacaact	ggagattttc	gtaagttgct	540
ggtacctctt	gggagctcct	accgtaatga	tggagatgag	gtgaatatga	ctttggcaaa	600
agcagaggct	aagatactcc	acgagaagat	ctcagagaag	gcttatggcc	atgaggatct	660
cataaggatt	ttggctacta	ggagcaaagc	acaggccaat	gctacgctga	atcactacaa	720
aaatgagttt	ggaaatgata	tcaacaagga	tttgaaaact	gatccaaaag	acgcgttcct	780
tactatactg	agagctacag	taaagtgcct	gactcgccct	gagaagtatt	ttgaaaagggt	840
tcttcgtcta	gccatcaata	agcgaggaac	agatgaaggg	gctctgacca	gagtagttgc	900
taccagggcc	gaggttgaca	tgaagtttat	aagtgaggag	taccagagga	ggaatagcat	960
ccctctcgat	cgtgccattg	tcaaggacac	tactggagac	tatgaaaaaa	tgcttctggc	1020
attgattggc	cacgtcgagg	cttgattttac	aagtactcat	gaagctatcc	tggtggaggc	1080
aatatctctg	tttttggtgt	ggtttgaggc	atttctattt	tccttgcttt	ccaacaacgt	1140
gtagttacca	acatgcctcc	ccagttgtca	gttgtagcta	tgcgaagcaa	atacacttct	1200
tataatggcg	ttggtttatg	tacttatgag	aagtctttga	ttttgatctt	taatcaagac	1260
tgctagtaag	tgatcgtgaa	aaaaaaaaaa	aaa			1293

```
<210> 110
<211> 484
<212> DNA
<213> Pinus radiata
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<400> 110

ggaagctgat	tcggaacc	tatgccgaga	cttacggcga	ggacctctc	aaggcattgg	60
acagagaact	taccaatgat	tttgaggctc	gatcttcttt	aattatttgt	attcatccca	120
tggagacgcg	tcctcttttc	tctcagatta	atccatattc	attccgtatc	gtcagaggct	180
ggtggtcctt	tggtcgcttg	atccggctga	acgtgatgcg	tacttggcga	atgaagcgac	240
gaaaagatgg	acttcaagca	accaggttct	catggaaata	gcctgcacga	ggtctccaca	300
gcagttgctc	atggcaagac	aagcatatca	tgctcgatac	aagaagtgcg	tggaagagga	360
cgtcgctcac	cacacaactg	gagattttcg	taagttgctg	gtacctcttg	tgagctccta	420
ccattatgat	ggagatgagg	tgaatatgac	tttggcaaaa	gcagaggcta	agatactcca	480
cgag						484

```
<210> 111
<211> 221
<212> DNA
<213> Pinus radiata
```

<400> 111

cgtacttggc	gaatgaagcg	acgaaaagat	ggacttcaag	caaccagggt	ctaattggaaa	60
tagcctgcac	gaggtctccg	cagcagttgc	ttatggcaag	acaagcatat	catgcccgat	120
acaagaagtc	gctggaagag	gacgtcggtc	accacacaac	tggagatttt	cgtaagtgtg	180
tggtacctct	tgtgagctcc	taccgttatg	atggagatga	g		221

<210> 112

<211> 789

<212> DNA

<213> Pinus radiata

<400> 112

atcgtcttcg	gctcctcgcg	atatcaccaa	cttgcttccg	cacagagaga	gagagagaga	60
gagagagaga	gaatggcgac	tatcgcggtg	ccaccgtcgg	ttccgtctcc	ggctgaggat	120
gccgagcagc	tccaaaaagc	tttcgcagga	tgggggacga	atgaagatct	gatcatatcc	180
atactgcctc	acagaaacgc	agcgcagcgg	aaagtaatcc	gacaaacata	tgccgagaca	240
tatggggaag	atcttctcaa	agcgtttgac	aaggaactct	ctagtgaact	tgagagatct	300
gtgcttctgt	ggaccctgga	tctgctggag	cgtgatgcat	tcttgtccaa	tgaagctacc	360
aagagattga	cttcgagcaa	ctgggttctc	atggaaattg	cttgacagag	gtcttcaatg	420
gagttattca	tgggtgaggca	ggcctatcat	gctcgttata	agaaatctct	tgaagaagac	480
atcgcatatc	acactactgg	ggatttccgc	aagctgcttg	ttcctctggc	aagtaccttt	540
cggtatgagg	ggcctgaggt	gaacatgaca	ttggcgagat	cagaggctaa	gatacttcat	600
gagaagattc	acgagaaggc	ttacaatcat	gatgagctca	tcagaattgt	tactacaaga	660
agtaaagctc	agcttaatgc	aaccctcaat	tactacaaca	atgagtttgg	gaatgccatc	720
aacaaggatc	tgaaggctga	tccaaatgat	gaatttctga	aactgctgag	atcagcaatt	780
aagtgcctg						789

<210> 113

<211> 704

<212> DNA

<213> Pinus radiata

<400> 113

gttttggtga	gctactagat	tttagtaaat	caagaattca	tcagctataa	attgaggcat	60
tcgatttcag	ttttagttac	attttggtga	agttggtcga	cctgcattgc	tgaagatatc	120
gtgcgaagta	tgtgatttgt	cgagaagatg	tcaacaatta	tagtgccagt	tccaataccg	180
accccatctg	aagactctga	acgcctgagg	aaggcttttg	aaggggtggg	cacaaatgag	240
aagtcaatca	tacaaatatt	aggacataga	actgcagcac	aacgcaaagt	aatccgtcaa	300
agttattttc	aactgtacga	agaggatctc	ttgaagcgat	tagaatctga	gctttcaagt	360
gactttgaga	aagctgtatt	cctttgggta	ctagatccag	ctgaacgtga	tgcggtcata	420
tctcatgggtg	caataaagaa	gtggaatgca	aagaatatat	cgctttttaga	aattttccagt	480
gctcgatctt	cggctgaact	attgatgggtg	aggcaagcat	atcatattcg	gtacaaaaag	540
tccctcgaag	aagacgtggc	tgacacatata	agtggaaact	tccgtaagtt	gctggttagca	600
cttgtaagtt	catatcggtg	tgaagggtccg	gaagtggata	tgcatattggc	aagttatgaa	660
gcaaagaagc	taagtgaatc	tataaccgag	caaaaaagat	aatt		704

<210> 114

<211> 316

<212> PRT

<213> Pinus radiata

<400> 114

Met	Ser	Thr	Leu	Thr	Val	Pro	Gln	Pro	Leu	Pro	Pro	Val	Ala	Asp	Asp
1				5					10					15	
Cys	Glu	Gln	Leu	Arg	Thr	Ala	Phe	Ala	Gly	Trp	Gly	Thr	Asn	Glu	Lys
			20					25					30		
Leu	Ile	Ile	Ser	Ile	Leu	Gly	His	Arg	Asn	Ala	Ala	Gln	Arg	Lys	Leu

```

      35      40      45
Ile Arg Gln Thr Tyr Ala Glu Thr Tyr Gly Glu Asp Leu Leu Lys Ala
  50      55      60
Leu Asp Arg Glu Leu Thr Asn Asp Phe Glu Arg Leu Val Val Leu Trp
  65      70      75      80
Ser Leu Asp Pro Ala Glu Arg Asp Ala Tyr Leu Ala Asn Glu Ala Thr
      85      90      95
Lys Arg Trp Thr Ser Ser Asn Gln Val Leu Met Glu Ile Ala Cys Thr
      100      105      110
Arg Ser Pro Gln Gln Leu Leu Met Ala Arg Gln Ala Tyr His Ala Arg
      115      120      125
Tyr Lys Lys Ser Met Glu Glu Asp Val Ala His His Thr Thr Gly Asp
      130      135      140
Phe Arg Lys Leu Leu Val Pro Leu Gly Ser Ser Tyr Arg Asn Asp Gly
  145      150      155      160
Asp Glu Val Asn Met Thr Leu Ala Lys Ala Glu Ala Lys Ile Leu His
      165      170      175
Glu Lys Ile Ser Glu Lys Ala Tyr Gly His Glu Asp Leu Ile Arg Ile
      180      185      190
Leu Ala Thr Arg Ser Lys Ala Gln Val Asn Ala Thr Leu Asn His Tyr
      195      200      205
Lys Asn Glu Phe Gly Asn Asp Ile Asn Lys Asp Leu Lys Thr Asp Pro
  210      215      220
Lys Asp Ala Phe Leu Thr Ile Leu Arg Ala Thr Val Lys Cys Leu Thr
  225      230      235      240
Arg Pro Glu Lys Tyr Phe Glu Lys Val Leu Arg Leu Ala Ile Asn Lys
      245      250      255
Arg Gly Thr Asp Glu Gly Ala Leu Thr Arg Val Val Ala Thr Arg Ala
      260      265      270
Glu Val Asp Met Lys Phe Ile Ser Glu Glu Tyr Gln Arg Arg Asn Ser
      275      280      285
Ile Pro Leu Asp Arg Ala Ile Val Lys Asp Thr Thr Gly Asp Tyr Glu
  290      295      300
Lys Met Leu Leu Ala Leu Ile Gly His Val Glu Ala
  305      310      315

```

<210> 115

<211> 111

<212> PRT

<213> Pinus radiata

<400> 115

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Ser Ile Phe Ile Pro Tyr Arg Gln Arg Leu Val Val Leu Trp Ser Leu
  1      5      10      15
Asp Pro Ala Glu Arg Asp Ala Tyr Leu Ala Asn Glu Ala Thr Lys Arg
      20      25      30
Trp Thr Ser Ser Asn Gln Val Leu Met Glu Ile Ala Cys Thr Arg Ser
      35      40      45
Pro Gln Gln Leu Leu Met Ala Arg Gln Ala Tyr His Ala Arg Tyr Lys
  50      55      60
Lys Ser Leu Glu Glu Asp Val Ala His His Thr Thr Gly Asp Phe Arg
  65      70      75      80
Lys Leu Leu Val Pro Leu Val Ser Ser Tyr His Tyr Asp Gly Asp Glu
      85      90      95
Val Asn Met Thr Leu Ala Lys Ala Glu Ala Lys Ile Leu His Glu
      100      105      110

```

<210> 116
 <211> 73
 <212> PRT
 <213> Pinus radiata

<400> 116
 Tyr Leu Ala Asn Glu Ala Thr Lys Arg Trp Thr Ser Ser Asn Gln Val
 1 5 10 15
 Leu Met Glu Ile Ala Cys Thr Arg Ser Pro Gln Gln Leu Leu Met Ala
 20 25 30
 Arg Gln Ala Tyr His Ala Arg Tyr Lys Lys Ser Leu Glu Glu Asp Val
 35 40 45
 Gly His His Thr Thr Gly Asp Phe Arg Lys Leu Leu Val Pro Leu Val
 50 55 60
 Ser Ser Tyr Arg Tyr Asp Gly Asp Glu
 65 70

<210> 117
 <211> 239
 <212> PRT
 <213> Pinus radiata

<400> 117
 Met Ala Thr Ile Ala Val Pro Pro Ser Val Pro Ser Pro Ala Glu Asp
 1 5 10 15
 Ala Glu Gln Leu Gln Lys Ala Phe Ala Gly Trp Gly Thr Asn Glu Asp
 20 25 30
 Leu Ile Ile Ser Ile Leu Pro His Arg Asn Ala Ala Gln Arg Lys Val
 35 40 45
 Ile Arg Gln Thr Tyr Ala Glu Thr Tyr Gly Glu Asp Leu Leu Lys Ala
 50 55 60
 Leu Asp Lys Glu Leu Ser Ser Asp Phe Glu Arg Ser Val Leu Leu Trp
 65 70 75 80
 Thr Leu Asp Pro Ala Glu Arg Asp Ala Phe Leu Ser Asn Glu Ala Thr
 85 90 95
 Lys Arg Leu Thr Ser Ser Asn Trp Val Leu Met Glu Ile Ala Cys Thr
 100 105 110
 Arg Ser Ser Met Glu Leu Phe Met Val Arg Gln Ala Tyr His Ala Arg
 115 120 125
 Tyr Lys Lys Ser Leu Glu Glu Asp Ile Ala Tyr His Thr Thr Gly Asp
 130 135 140
 Phe Arg Lys Leu Leu Val Pro Leu Ala Ser Thr Phe Arg Tyr Glu Gly
 145 150 155 160
 Pro Glu Val Asn Met Thr Leu Ala Arg Ser Glu Ala Lys Ile Leu His
 165 170 175
 Glu Lys Ile His Glu Lys Ala Tyr Asn His Asp Glu Leu Ile Arg Ile
 180 185 190
 Val Thr Thr Arg Ser Lys Ala Gln Leu Asn Ala Thr Leu Asn Tyr Tyr
 195 200 205
 Asn Asn Glu Phe Gly Asn Ala Ile Asn Lys Asp Leu Lys Ala Asp Pro
 210 215 220
 Asn Asp Glu Phe Leu Lys Leu Leu Arg Ser Ala Ile Lys Cys Leu
 225 230 235

<210> 118
 <211> 184
 <212> PRT

<213> *Pinus radiata*

<400> 118

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Met Ser Thr Ile Ile Val Pro Val Pro Ile Pro Thr Pro Ser Glu Asp
 1           5           10           15
Ser Glu Arg Leu Arg Lys Ala Phe Glu Gly Trp Gly Thr Asn Glu Lys
      20           25           30
Ser Ile Ile Gln Ile Leu Gly His Arg Thr Ala Ala Gln Arg Lys Val
      35           40           45
Ile Arg Gln Ser Tyr Phe Gln Leu Tyr Glu Glu Asp Leu Leu Lys Arg
      50           55           60
Leu Glu Ser Glu Leu Ser Ser Asp Phe Glu Lys Ala Val Phe Leu Trp
      65           70           75           80
Val Leu Asp Pro Ala Glu Arg Asp Ala Val Ile Ser His Gly Ala Ile
      85           90           95
Lys Lys Trp Asn Ala Lys Asn Ile Ser Leu Leu Glu Ile Ser Ser Ala
      100          105          110
Arg Ser Ser Ala Glu Leu Leu Met Val Arg Gln Ala Tyr His Ile Arg
      115          120          125
Tyr Lys Lys Ser Leu Glu Glu Asp Val Ala Ala His Thr Ser Gly Asn
      130          135          140
Phe Arg Lys Leu Leu Val Ala Leu Val Ser Ser Tyr Arg Tyr Glu Gly
      145          150          155          160
Pro Glu Val Asp Met His Leu Ala Ser Tyr Glu Ala Lys Lys Leu Ser
      165          170          175
Glu Ser Ile Thr Glu Gln Lys Arg
      180

```

<210> 119

<211> 568

<212> DNA

<213> *Eucalyptus grandis*

<400> 119

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tcgtcacc ca attcctcacc aacaacaacc gagcctctgg cacactttcc tccatcagga      60
ggttctacgt ccaggacggc aaagtaattc caaactctat ggtaaaccctc tccgggtcttc      120
ccaaagtcaa ctcgatcacg tcagattact gcaccgctaa aatggacgtt ctcgacgatt      180
ctaccgcttt caacgtacat ggtggtcttg caaagatggg taaatccctt gcacgaggag      240
cagtactcgt ggtcagtcctc tgggatgata ttggcgggcg gatgacttgg ttggatggtc      300
tagcagggga tgcactctgcc cctgggaccc tccgtggacc gtgcaccgct gcgaatgtaa      360
catcagatcc ggctacctcc gtcactttct cgaatatccg agttggcgat atcaatagca      420
ctttctctca ggtgcacttt gggcaatgtg gaggtcaatt ttacgagggg ccagctcttt      480
gcgcagaccc attcgagtgt gtcttcagta atccgtatta cagccagtgt ctataagata      540
ttgaatataa cacggtttat gtccttcc                                568

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<210> 120

<211> 360

<212> DNA

<213> *Eucalyptus grandis*

<400> 120

cgacatgttc	gacaaggccg	ctctcttcgc	tttctcttta	ctcgccgtca	cttacgggtca	60
gcagggtcgg	acccagactg	ctgaatctca	tccgcctctt	acctggcaaa	aatgtacgac	120
tgctggtgga	tgtaccaatg	tttctggtgg	tagtggtgtc	attgacgcga	attggcggtg	180
ggtccattcc	atcaacggta	ctactaactg	ttacactggg	caagcatgga	acacgacact	240
ctgtccggat	gacacgactt	gcgcagccaa	ctgcgctttg	gatggtgctg	attactctgg	300
cacttatggc	attactactt	ccggcaatgc	tcttaccctc	aagttcgtca	ctcaatcttc	360

<210> 121

<211> 375

<212> DNA

<213> Eucalyptus grandis

<400> 121

tattatgatg	cgaatttaat	tgctatagca	gttgggttta	gcaggacaat	ttacagtgtg	60
attcctcaat	ggagccggtt	gataggtggg	gtcttcttca	gtttttgggt	cttggtcat	120
ctgtatcctt	ttgcaaagg	gctcatggga	agacgtgggc	gcacccctac	cattgttttc	180
gtttggtcag	gactcattgc	aatcaccata	tcacttcttt	gggtggcaat	cagcccccca	240
gctgggtcaa	cccaaactcg	tggtctcttt	cagttccctt	gatagggtat	tctttttaat	300
atgctttatc	tgtttagtga	cattactcca	ttctttttta	aatgagatga	tcagtgtgac	360
aaaaaaaaaa	aaaaa					375

<210> 122

<211> 590

<212> DNA

<213> Eucalyptus grandis

<400> 122

cacgactttg	gaagatggtg	gtgttccgcc	agatgctagt	cctgcacgc	tactaaaaga	60
agccatccaa	gtcatcagtt	gcggatatga	agacaagaca	gaatggggaa	aagaagtgg	120
ctggatatac	ggttcgggtg	ctgaggatat	attgactggg	ttcaaaatgc	actgccacgg	180
ctggagatcg	gtgtactgta	tacctaagag	gcctgcattc	aagggttcag	caccgatcaa	240
cctttcggat	cgtctacacc	aggttctccg	gtgggctcct	gggtcagttg	agattttctt	300
gagcaggcat	tgcccaatct	ggatatggta	cgggggagg	tggaagtgg	tggaacgatt	360
ttcttacatc	aattcggttg	tgtatccttg	gacctccatc	cccttgattg	tttactgctc	420
actcccggct	atctgccttc	tcactggcca	attcatcggt	cctgagatta	gcaactatgc	480
aagtctcgtc	tttatggcac	ttttcatctc	cattgctgcg	actgggtatt	ttgagatgca	540
atgggggtgg	gttggaatcg	atgactgggt	gagaaacgag	cagttttggg		590

<210> 123

<211> 590

<212> DNA

<213> Eucalyptus grandis

<400> 123

cactgcactg	attcctaaga	agttcggaaa	ctcatacatg	ttcattgatt	ccataccttt	60
agctgagttc	caaggccgac	cccttgccga	ccatccatcc	gtgaaaaatg	gacggcctcc	120
tggtgctctc	actgttcttc	gacggcttct	tgatgcgtca	acagttgcag	aggcaataag	180
tgccatctca	tgctggtacg	aagataaaac	tgagtggggg	gaacgagtag	ggtggattta	240
cgggtccgtc	acagaggatg	tcgtgacagg	gtatagaatg	cacaatcgag	gatggacatc	300
tgtatactgc	gtgaccaaga	gagatgcttt	tcgtgggacc	gcacccatca	atctcaccga	360
tcgggttcat	caagtctctg	gctgggcgac	gggtcgggtg	gagatattct	tctctcgcaa	420
caatgccata	atggccagcg	gcaggctgaa	gttccttcag	aggattgctt	acctcaacgt	480
tggaatttac	cctttcactt	ccatctttct	tattgtctac	tgctttctcc	cggcgctctc	540
tctattctct	gggaagttca	ttgtgcaatc	gtcagtgta	tccttcttaa		590

<210> 124

<211> 619

<212> DNA

<213> Eucalyptus grandis

<400> 124

ggaaaggggtg	gtgacaagaa	ttacatcgac	aagaagagag	ctggcaaaag	aactgaatcc	60
aacattccaa	tattcaacat	ggaggatatt	gaggagggga	tggaagggtta	tgatgatgag	120
agatcactgc	ttatgtccca	gaaaagctta	gagaagcgct	ttggtcaatc	gccagtcttc	180
attgcagcaa	cattcatgga	acagggaggg	cttccaccat	ctactaatcc	agcaactctt	240
ttgaaggaag	caattcatgt	tatcagctgt	ggctatgagg	acaagactga	gtggggcaaa	300
gagattggat	ggatatacgg	ttctgtcaca	gaagatatct	taacaggggt	taagatgcat	360
gctcgaggtt	ggatctccat	ttactgtatg	cctccacgcc	cagcattcaa	gggttccgct	420
cccataaatc	tttcagatcg	tctgaaccaa	gttcttcgat	gggcattggg	gtccattgag	480
atctttactaa	gcaggcattg	tcctatatgg	tatggttaca	atgggagact	gaagtgggtg	540
gagagattgg	catatataaa	taccattgtg	tatcccctca	cttcaatcct	cttgattgct	600
tattgcatc	tgccctgcat					619

<210> 125

<211> 429

<212> DNA

<213> Eucalyptus grandis

<400> 125

cgctcctctta	gcccccttgcc	cagcagttgc	aagtccatca	ttcatcatca	tgctcctcca	60
gactggcgctc	ttcctcgcca	cgctcctggg	caccgccccat	gcccaggccg	taggcaagga	120
gcagaccgag	actcacccca	agatgacatg	gaagaagtgc	agtagcgggtg	gcagctgcac	180
tagcgtgaac	ggtgaagtca	ccatcgacgc	caattggcgc	tggtctgcacg	ggacgtcaga	240
caccaagaac	tgctacgatg	gcaacaagtg	gaccgacaag	tgacgacgcg	cgactgactg	300
cgccctccaag	tgccgccatcg	aaggtgccac	ctattccaag	acatacgggtg	cctccactag	360
cggtgatgcc	ctgactctca	agttcgctac	caagcacgaa	tatggtacca	atatcggtc	420
tcgtctcta						429

<210> 126

<211> 534

<212> DNA

<213> Eucalyptus grandis

<400> 126

ctggaatcat	cctttatctt	tgtgactgtg	cactttcaga	gaggaaggag	agagaggaaa	60
cccaaaagaa	aaggttggtg	cttgcagctg	aatcaatacc	acacacccat	atatacaata	120
ctcccacact	attccctttt	tttcttcctt	cattaatttt	atctctcttc	atcttgtaat	180
ttagatattt	ccaaacaaaa	gtctgtctct	ttttttcttt	tattattatc	atctgttccg	240
actccgattt	gccgtttgag	agaagttacc	tctgttatgg	actgtggatc	tccgagaacc	300
aagctgtcct	gagttgacct	tggtgtctct	ttaacccccc	tcaaccgatc	tgtcaagatt	360
gtagcctctg	tggtccgaca	aatgaatacc	gggtggctgg	taatcgccgg	ttcacacaa	420
aggaacgagt	ttgttcttat	taatgccgat	gagaatgcca	gaataagatc	agtgcgaag	480
ctgagtgggc	agacgtgtca	aatctgtaga	gacgagattg	aattgaccgt	cgat	534

<210> 127

<211> 450

<212> DNA

<213> Eucalyptus grandis

<400> 127

aaagcactga	gtgagagctg	gaactgaagt	gactgactga	tggttagagag	agagagaatt	60
gagatagaga	tggagtgcg	aggaagcctc	ccctcccttc	ttcaccaaac	gttcgctctc	120
tcccgtctca	cacctccttc	gctgctgccc	cctccattgc	gtagcaccgt	cgccgcccgt	180
cgccgcccgt	ctcctcttct	ccgagacccg	gaatcgcgaa	ccgcttgctg	agcaccgcca	240

```

tcgccccga gcgagcgaga gcgagagcga gagcgagagg ggaggacatg gaagcgaatg      300
ccgggatggg ggccggatcc tacaagcgga acgagctggg ccggatacgc cactgactccg      360
acagcgcgcc caagcccctg aagcacttgg atggccagat gtgtcagatt tgtggtgata      420
ccgttggact ttcggccagt ggtgatgtgt                                     450

```

<210> 128
 <211> 302
 <212> DNA
 <213> Eucalyptus grandis

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<400> 128
tcttgtccag gtttactcaa ggttttaggt ggagtcaaca caaacttcac cgtcacctca      60
aaagcagcgg atgatggagc attctcagaa ctctatatct ttaaattggac atcgctgttg      120
atcccgccca tgactctcct gatcatgaac attgtatgga ggctgttggc gggatctccg      180
atgccatcaa taatgggtat gattcgtggg gtccctctct tggtaggcta tttttcgctt      240
tctgggtcgc gtccatctct acccattcct aagggtattgc tcgggaagca agaccggatg      300
cc                                                                                   360

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<210> 129
 <211> 177
 <212> PRT
 <213> Eucalyptus grandis

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<400> 129
Val Thr Gln Phe Leu Thr Asn Asn Asn Arg Ala Ser Gly Thr Leu Ser
1      5      10      15
Ser Ile Arg Arg Phe Tyr Val Gln Asp Gly Lys Val Ile Pro Asn Ser
20     25     30
Met Val Asn Leu Ser Gly Leu Pro Lys Val Asn Ser Ile Thr Ser Asp
35     40     45
Tyr Cys Thr Ala Lys Met Asp Val Leu Asp Asp Ser Thr Ala Phe Asn
50     55     60
Val His Gly Gly Leu Ala Lys Met Gly Lys Ser Leu Ala Arg Gly Ala
65     70     75     80
Val Leu Val Val Ser Leu Trp Asp Asp Leu Gly Gly Gly Met Thr Trp
85     90     95
Leu Asp Gly Leu Ala Gly Asp Ala Ser Ala Pro Gly Thr Leu Arg Gly
100    105    110
Pro Cys Thr Ala Ala Asn Val Thr Ser Asp Pro Ala Thr Ser Val Thr
115    120    125
Phe Ser Asn Ile Arg Val Gly Asp Ile Asn Ser Thr Phe Ser Gln Val
130    135    140
His Phe Gly Gln Cys Gly Gly Gln Phe Tyr Glu Gly Pro Ala Leu Cys
145    150    155    160
Ala Asp Pro Phe Glu Cys Val Phe Ser Asn Pro Tyr Tyr Ser Gln Cys
165    170    175
Leu

```

<210> 130
 <211> 118
 <212> PRT
 <213> Eucalyptus grandis

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<400> 130
Met Phe Asp Lys Ala Ala Leu Phe Ala Phe Ser Leu Leu Ala Val Thr
1      5      10      15

```


Tyr Gly Gln Gln Val Gly Thr Gln Thr Ala Glu Ser His Pro Pro Leu
 20 25 30
 Thr Trp Gln Lys Cys Thr Thr Ala Gly Gly Cys Thr Asn Val Ser Gly
 35 40 45
 Gly Ser Val Val Ile Asp Ala Asn Trp Arg Trp Val His Ser Ile Asn
 50 55 60
 Gly Thr Thr Asn Cys Tyr Thr Gly Gln Ala Trp Asn Thr Thr Leu Cys
 65 70 75 80
 Pro Asp Asp Thr Thr Cys Ala Ala Asn Cys Ala Leu Asp Gly Ala Asp
 85 90 95
 Tyr Ser Gly Thr Tyr Gly Ile Thr Thr Ser Gly Asn Ala Leu Thr Leu
 100 105 110
 Lys Phe Val Thr Gln Ser
 115

<210> 131
 <211> 93
 <212> PRT
 <213> Eucalyptus grandis

<400> 131
 Tyr Tyr Asp Ala Asn Leu Ile Ala Ile Ala Val Gly Phe Ser Arg Thr
 1 5 10 15
 Ile Tyr Ser Val Ile Pro Gln Trp Ser Arg Leu Ile Gly Gly Val Phe
 20 25 30
 Phe Ser Phe Trp Val Leu Ala His Leu Tyr Pro Phe Ala Lys Gly Leu
 35 40 45
 Met Gly Arg Arg Gly Arg Thr Pro Thr Ile Val Phe Val Trp Ser Gly
 50 55 60
 Leu Ile Ala Ile Thr Ile Ser Leu Leu Trp Val Ala Ile Ser Pro Pro
 65 70 75 80
 Ala Gly Ser Thr Gln Ile Gly Gly Ser Phe Gln Phe Pro
 85 90

<210> 132
 <211> 196
 <212> PRT
 <213> Eucalyptus grandis

<400> 132
 Thr Thr Leu Glu Asp Gly Gly Val Pro Pro Asp Ala Ser Pro Ala Ser
 1 5 10 15
 Leu Leu Lys Glu Ala Ile Gln Val Ile Ser Cys Gly Tyr Glu Asp Lys
 20 25 30
 Thr Glu Trp Gly Lys Glu Val Gly Trp Ile Tyr Gly Ser Val Thr Glu
 35 40 45
 Asp Ile Leu Thr Gly Phe Lys Met His Cys His Gly Trp Arg Ser Val
 50 55 60
 Tyr Cys Ile Pro Lys Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn
 65 70 75 80
 Leu Ser Asp Arg Leu His Gln Val Leu Arg Trp Ala Leu Gly Ser Val
 85 90 95
 Glu Ile Phe Leu Ser Arg His Cys Pro Ile Trp Tyr Gly Tyr Gly Gly
 100 105 110
 Gly Leu Lys Trp Leu Glu Arg Phe Ser Tyr Ile Asn Ser Val Val Tyr
 115 120 125
 Pro Trp Thr Ser Ile Pro Leu Ile Val Tyr Cys Ser Leu Pro Ala Ile

130 135 140
 Cys Leu Leu Thr Gly Gln Phe Ile Val Pro Glu Ile Ser Asn Tyr Ala
 145 150 155 160
 Ser Leu Val Phe Met Ala Leu Phe Ile Ser Ile Ala Ala Thr Gly Ile
 165 170 175
 Leu Glu Met Gln Trp Gly Gly Val Gly Ile Asp Asp Trp Trp Arg Asn
 180 185 190
 Glu Gln Phe Trp
 195

<210> 133
 <211> 196
 <212> PRT
 <213> Eucalyptus grandis

<400> 133
 Thr Ala Leu Ile Pro Lys Lys Phe Gly Asn Ser Tyr Met Phe Ile Asp
 1 5 10 15
 Ser Ile Pro Leu Ala Glu Phe Gln Gly Arg Pro Leu Ala Asp His Pro
 20 25 30
 Ser Val Lys Asn Gly Arg Pro Pro Gly Ala Leu Thr Val Leu Arg Arg
 35 40 45
 Leu Leu Asp Ala Ser Thr Val Ala Glu Ala Ile Ser Ala Ile Ser Cys
 50 55 60
 Trp Tyr Glu Asp Lys Thr Glu Trp Gly Glu Arg Val Gly Trp Ile Tyr
 65 70 75 80
 Gly Ser Val Thr Glu Asp Val Val Thr Gly Tyr Arg Met His Asn Arg
 85 90 95
 Gly Trp Thr Ser Val Tyr Cys Val Thr Lys Arg Asp Ala Phe Arg Gly
 100 105 110
 Thr Ala Pro Ile Asn Leu Thr Asp Arg Leu His Gln Val Leu Arg Trp
 115 120 125
 Ala Thr Gly Ser Val Glu Ile Phe Phe Ser Arg Asn Asn Ala Ile Met
 130 135 140
 Ala Ser Gly Arg Leu Lys Phe Leu Gln Arg Ile Ala Tyr Leu Asn Val
 145 150 155 160
 Gly Ile Tyr Pro Phe Thr Ser Ile Phe Leu Ile Val Tyr Cys Phe Leu
 165 170 175
 Pro Ala Leu Ser Leu Phe Ser Gly Lys Phe Ile Val Gln Ser Leu Ser
 180 185 190
 Val Ser Phe Leu
 195

<210> 134
 <211> 206
 <212> PRT
 <213> Eucalyptus grandis

<400> 134
 Gly Lys Gly Gly Asp Lys Asn Tyr Ile Asp Lys Lys Arg Ala Gly Lys
 1 5 10 15
 Arg Thr Glu Ser Asn Ile Pro Ile Phe Asn Met Glu Asp Ile Glu Glu
 20 25 30
 Gly Met Glu Gly Tyr Asp Asp Glu Arg Ser Leu Leu Met Ser Gln Lys
 35 40 45
 Ser Leu Glu Lys Arg Phe Gly Gln Ser Pro Val Phe Ile Ala Ala Thr
 50 55 60

Phe Met Glu Gln Gly Gly Leu Pro Pro Ser Thr Asn Pro Ala Thr Leu
 65 70 75 80
 Leu Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys Thr
 85 90 95
 Glu Trp Gly Lys Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp
 100 105 110
 Ile Leu Thr Gly Phe Lys Met His Ala Arg Gly Trp Ile Ser Ile Tyr
 115 120 125
 Cys Met Pro Pro Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu
 130 135 140
 Ser Asp Arg Leu Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Ile Glu
 145 150 155 160
 Ile Leu Leu Ser Arg His Cys Pro Ile Trp Tyr Gly Tyr Asn Gly Arg
 165 170 175
 Leu Lys Trp Leu Glu Arg Leu Ala Tyr Ile Asn Thr Ile Val Tyr Pro
 180 185 190
 Leu Thr Ser Ile Leu Leu Ile Ala Tyr Cys Ile Leu Pro Ala
 195 200 205

<210> 135
 <211> 126
 <212> PRT
 <213> Eucalyptus grandis

<400> 135
 Met Leu Leu Gln Thr Gly Val Phe Leu Ala Thr Leu Leu Gly Thr Ala
 1 5 10 15
 His Ala Gln Ala Val Gly Lys Glu Gln Thr Glu Thr His Pro Lys Met
 20 25 30
 Thr Trp Lys Lys Cys Ser Ser Gly Gly Ser Cys Thr Ser Val Asn Gly
 35 40 45
 Glu Val Thr Ile Asp Ala Asn Trp Arg Trp Leu His Gly Thr Ser Asp
 50 55 60
 Thr Lys Asn Cys Tyr Asp Gly Asn Lys Trp Thr Asp Lys Cys Ser Ser
 65 70 75 80
 Ala Thr Asp Cys Ala Ser Lys Cys Ala Ile Glu Gly Ala Thr Tyr Ser
 85 90 95
 Lys Thr Tyr Gly Ala Ser Thr Ser Gly Asp Ala Leu Thr Leu Lys Phe
 100 105 110
 Val Thr Lys His Glu Tyr Gly Thr Asn Ile Gly Ser Arg Leu
 115 120 125

<210> 136
 <211> 51
 <212> PRT
 <213> Eucalyptus grandis

<400> 136
 Met Asn Thr Gly Arg Leu Ile Ala Gly Ser His Asn Arg Asn Glu
 1 5 10 15
 Phe Val Leu Ile Asn Ala Asp Glu Asn Ala Arg Ile Arg Ser Val Gln
 20 25 30
 Glu Leu Ser Gly Gln Thr Cys Gln Ile Cys Arg Asp Glu Ile Glu Leu
 35 40 45
 Thr Val Asp
 50

<210> 137
 <211> 54
 <212> PRT
 <213> Eucalyptus grandis

<400> 137
 Met Glu Ala Asn Ala Gly Met Val Ala Gly Ser Tyr Lys Arg Asn Glu
 1 5 10 15
 Leu Val Arg Ile Arg His Asp Ser Asp Ser Ala Pro Lys Pro Leu Lys
 20 25 30
 His Leu Asp Gly Gln Met Cys Gln Ile Cys Gly Asp Thr Val Gly Leu
 35 40 45
 Ser Ala Ser Gly Asp Val
 50

<210> 138
 <211> 100
 <212> PRT
 <213> Eucalyptus grandis

<400> 138
 Ser Cys Pro Gly Leu Leu Lys Val Leu Gly Gly Val Asn Thr Asn Phe
 1 5 10 15
 Thr Val Thr Ser Lys Ala Ala Asp Asp Gly Ala Phe Ser Glu Leu Tyr
 20 25 30
 Ile Phe Lys Trp Thr Ser Leu Leu Ile Pro Pro Met Thr Leu Leu Ile
 35 40 45
 Met Asn Ile Val Trp Arg Leu Leu Ala Gly Ser Pro Met Pro Ser Ile
 50 55 60
 Met Gly Met Ile Arg Gly Val Pro Ser Leu Val Gly Tyr Phe Ser Pro
 65 70 75 80
 Ser Gly Ser Arg Pro Ser Leu Pro Ile Pro Lys Gly Leu Leu Gly Lys
 85 90 95
 Gln Asp Arg Met
 100

<210> 139
 <211> 2906
 <212> DNA
 <213> Eucalyptus grandis

<400>139
 gggaggccga gcctcttgct ttttttcgtg tataaaaggg cctcccccat tcctcatttt 60
 tcaccatcct ccgttcgttc gttcccttcc ctttccattg ttgcgtttta ggcctccaat 120
 tttcttttgg cgctccggtt ttggggctcc cttgaagatc tcctcttcat ttcgggattt 180
 cctgccttcg ccgcgccatt tgaagttctt tttctgagag aagaatttag acatggctga 240
 tcgcatgctg actcgaagcc acagccttcg cgagcgtttg gacgagaccc tctctgctca 300
 ccgcaacgat attgtggcct tcctttcaag ggttgaagcc aagggcaaag gcatcttgca 360
 gcgccaccag atttttgctg agtttgaggc catctctgag gagagcagag caaagcttct 420
 tgatggggcc tttggtgaag tcctcaaata cactcaggaa gcgatttgtg cgcctccatg 480
 ggttgctctt gctgttcgtc caaggccggg cgtgtgggag cacatccgtg tgaacgtcca 540
 tgcgcttggt cttgagcaat tggaggttgc tgagtatctg cacttcaaag aagagcttgc 600
 tgatggaagc ttgaatggta actttgtgct tgagcttgac tttgagccat tcaactgcctc 660
 ttttccgcgc ccgactcttt ccaagtctat tggcaatggc gtcgagtttc tcaatcgcca 720

tctctccgct	aagctcttcc	atgacaagga	aagcttgac	cctctgcttg	aattcctcca	780
agtccactgc	tacaagggga	agaacatgat	ggtgaatgcc	agaatccaga	atgtgttctc	840
cctccaacat	gtcctgagga	aggcggagga	gtatctgacc	tcgctcaaac	ccgagacccc	900
gtactcccag	ttcgagcaca	agttccagga	gatcgggctc	gagcgggggt	ggggtgacac	960
ggctgagcgc	gtcctcgaga	tgatccagct	cctgttgat	ctccttgagg	ctccccgacc	1020
gtgcactctc	gagaagttct	tggatagggt	tcccatgggc	ttcaacgtcg	tgatcatgtc	1080
tccccacgga	tactttgctc	aggacgacgt	ccttggttat	ccggataccg	gtggccaggt	1140
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acaaggactg	gatattactc	ctcggattct	cattatcact	cggcttcttc	cagacgcggt	1260
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<210> 140

<211> 1592

<212> DNA

<213> Pinus radiata

<400> 140

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<210> 141

<211> 3747

<212> DNA

<213> *Eucalyptus grandis*

<400> 141

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<210> 142

<211> 770

<212> DNA

<213> Eucalyptus grandis

<400> 142

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<210> 143

<211> 543

<212> DNA

<213> Pinus radiata

<400> 143

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<210> 144

<211> 805

<212> PRT

<213> *Eucalyptus grandis*

<400> 144

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Ile Lys Gln Gln Gly Leu Asp Ile Thr Pro Arg Ile Leu Ile Ile Thr		
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Arg Leu Leu Pro Asp Ala Val Gly Thr Thr Cys Gly Gln Arg Leu Glu		
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Lys Val Phe Gly Thr Glu Tyr Ser His Ile Leu Arg Val Pro Phe Arg		
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Asn Glu Lys Gly Val Val Arg Lys Trp Ile Ser Arg Phe Glu Val Trp		
370	375	380
Pro Tyr Leu Glu Arg Tyr Thr Glu Asp Val Ala Ser Glu Leu Ala Gly		
385	390	395
Glu Leu Gln Gly Lys Pro Asp Leu Ile Ile Gly Asn Tyr Ser Asp Gly		
405	410	415
Asn Ile Val Ala Ser Leu Leu Ala His Lys Leu Gly Val Thr Gln Cys		
420	425	430
Thr Ile Ala His Ala Leu Glu Lys Thr Lys Tyr Pro Glu Ser Asp Ile		
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Tyr Trp Lys Lys Phe Glu Glu Lys Tyr His Phe Ser Cys Gln Phe Thr		
450	455	460
Ala Asp Leu Ile Ala Met Asn His Thr Asp Phe Ile Ile Thr Ser Thr		
465	470	475
Phe Gln Glu Ile Ala Gly Ser Lys Asp Thr Val Gly Gln Tyr Glu Ser		
485	490	495
His Met Asn Phe Thr Leu Pro Gly Leu Tyr Arg Val Val His Gly Ile		
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Asp Val Phe Asp Pro Lys Phe Asn Ile Val Ser Pro Gly Ala Asp Met		
515	520	525
Ser Ile Tyr Phe Ala Tyr Thr Glu Gln Glu Arg Arg Leu Lys Ser Phe		
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His Pro Glu Ile Glu Glu Leu Leu Phe Ser Asp Val Glu Asn Lys Glu		
545	550	555
His Leu Cys Val Leu Lys Asp Lys Lys Lys Pro Ile Ile Phe Thr Met		
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Gly Asp Arg Arg Lys Asp Ser Lys Asp Leu Glu Glu Gln Ser Glu Met		
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Lys Lys Met Tyr Asp Leu Ile Glu Lys Tyr Lys Leu Asn Gly Gln Phe		
625	630	635
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Arg Tyr Ile Cys Asp Thr Lys Gly Val Phe Val Gln Pro Ala Ile Tyr		
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Glu Ala Phe Gly Leu Thr Val Val Glu Ala Met Thr Cys Gly Leu Pro		
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Thr Phe Ala Thr Cys Asn Gly Gly Pro Ala Glu Ile Ile Val His Gly		
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Leu Leu Val Asp Phe Phe Asn Lys Cys Lys Ile Asp Gln Ser His Trp		
725	730	735

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<210> 145

<211> 419

<212> PRT

<213> Pinus radiata

<400> 145

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 35 40 45
 Leu Glu Glu Lys Ile Pro His Ile Ala Lys Ala Gly Phe Thr Ser Val
 50 55 60
 Trp Leu Pro Pro Ala Phe Asp Ser Ala Ala Pro Gln Gly Tyr Leu Pro
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 Arg Asn Ile Tyr Ser Leu Asn Ser Ala Tyr Gly Ser Glu Tyr Gln Leu
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 Lys Ser Leu Leu Met Thr Met Arg Lys Lys Asn Val Arg Ala Met Ala
 100 105 110
 Asp Ile Val Ile Asn His Arg Met Gly Ser Ser Gln Gly Phe Gly Gly
 115 120 125
 Leu Tyr Asn Arg Tyr Asp Gly Leu Pro Leu Pro Trp Asp Glu Arg Ala
 130 135 140
 Val Thr Arg Cys Ser Gly Gly Leu Gly Asn Trp Ser Thr Gly Asp Asn
 145 150 155 160
 Phe His Gly Val Pro Asn Val Asp His Thr Gln Asp Phe Val Arg Lys
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 Asp Ile Lys Asp Trp Leu Arg Trp Leu Arg Lys Ser Val Gly Phe Gln
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 Asp Phe Arg Phe Asp Phe Ala Lys Gly Tyr Ala Ala Lys Phe Val Lys
 195 200 205
 Glu Tyr Ile Glu Ala Ser Thr Pro Met Phe Ala Val Gly Glu Tyr Trp
 210 215 220
 Asp Ser Cys Asn Tyr Thr Pro Pro Ser Tyr His Leu Asp Lys Asn Gln
 225 230 235 240
 Asp Ser His Arg Gln Arg Ile Ile Asn Trp Ile Asp Gly Thr Ser Gly
 245 250 255
 Ile Ser Ala Ala Phe Asp Phe Thr Thr Lys Gly Ile Leu Gln Glu Ala
 260 265 270
 Val Lys Gly Gln Cys Trp Arg Leu Arg Asp His Gln Gly Lys Pro Pro
 275 280 285
 Gly Val Leu Gly Trp Trp Pro Pro Arg Leu Val Leu Leu Asn Glu Asn
 290 295 300
 His Asp Thr Gly Ser Thr Gln Gly His Trp Pro Phe Pro Cys Asp His
 305 310 315 320

Ile Met Glu Gly Tyr Ala Tyr Ile Leu Thr His Pro Gly Ile Pro Ala
 325 330 335
 Val Phe Tyr Asp His Phe Phe Asp Trp Gly Ser Ser Ile Gln Asn Glu
 340 345 350
 Ile Ile Lys Leu Met Arg Ile Arg Arg Thr Gln Asp Leu Asn Ser Arg
 355 360 365
 Ser Ser Ile Glu Ile Leu Glu Ala Ser Ser Thr Val Tyr Ala Ala Ile
 370 375 380
 Ile Gly Arg Lys Val Cys Met Lys Ile Gly Asp Gly Ser Trp Cys Pro
 385 390 395 400
 Asn Gly Arg Glu Trp Gln Leu Ala Thr Cys Gly His Arg Tyr Ala Val
 405 410 415
 Trp His Lys

<210> 146
 <211> 955
 <212> PRT
 <213> Eucalyptus grandis

<400> 146
 Met Met Glu Ser Gly Val Pro Leu Cys Asn Thr Cys Gly Glu Ala Val
 1 5 10 15
 Gly Val Asp Glu Lys Gly Glu Val Phe Val Ala Cys Gln Glu Cys Asn
 20 25 30
 Phe Ala Ile Cys Lys Ala Cys Val Glu Tyr Glu Ile Lys Glu Gly Arg
 35 40 45
 Lys Ala Cys Leu Arg Cys Gly Thr Pro Phe Glu Ala Asn Ser Met Ala
 50 55 60
 Asp Ala Glu Arg Asn Glu Leu Gly Ser Arg Ser Thr Met Ala Ala Gln
 65 70 75 80
 Leu Asn Asp Pro Gln Asp Thr Gly Ile His Ala Arg His Ile Ser Ser
 85 90 95
 Val Ser Thr Leu Asp Ser Glu Tyr Asn Asp Glu Thr Gly Asn Pro Ile
 100 105 110
 Trp Lys Asn Arg Val Glu Ser Trp Lys Asp Lys Lys Asn Lys Lys Lys
 115 120 125
 Lys Ala Pro Thr Lys Ala Glu Lys Glu Ala Gln Val Pro Pro Glu Gln
 130 135 140
 Gln Met Glu Glu Lys Gln Ile Ala Asp Ala Ser Glu Pro Leu Ser Thr
 145 150 155 160
 Val Ile Pro Ile Ala Lys Ser Lys Leu Ala Pro Tyr Arg Thr Val Ile
 165 170 175
 Ile Met Arg Leu Ile Ile Leu Ala Leu Phe Phe His Tyr Arg Val Thr
 180 185 190
 His Pro Val Asp Ser Ala Tyr Pro Leu Trp Leu Thr Ser Ile Ile Cys
 195 200 205
 Glu Ile Trp Phe Ala Tyr Ser Trp Val Leu Asp Gln Phe Pro Lys Trp
 210 215 220
 Ser Pro Val Asn Arg Ile Thr His Val Asp Arg Leu Ser Ala Arg Tyr
 225 230 235 240
 Glu Lys Glu Gly Glu Pro Ser Glu Leu Ala Ala Val Asp Phe Phe Val
 245 250 255
 Ser Thr Val Asp Pro Met Lys Glu Pro Pro Leu Ile Thr Ala Asn Thr
 260 265 270
 Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val Asp Lys Val Ser Cys
 275 280 285

Tyr Leu Ser Asp Asp Gly Ala Ala Met Leu Ser Phe Glu Ser Leu Val
 290 295 300
 Glu Thr Ala Asp Phe Ala Arg Lys Trp Val Pro Phe Cys Lys Lys Tyr
 305 310 315 320
 Ser Ile Glu Pro Arg Ala Pro Glu Phe Tyr Phe Ser Gln Lys Ile Asp
 325 330 335
 Tyr Leu Lys Asp Lys Ile Gln Pro Ser Phe Val Lys Glu Arg Arg Ala
 340 345 350
 Met Lys Arg Asp Tyr Glu Glu Phe Lys Val Arg Val Asn Ala Leu Val
 355 360 365
 Ala Lys Ala Gln Lys Ala Pro Glu Glu Gly Trp Ser Met Gln Asp Gly
 370 375 380
 Thr Pro Trp Pro Gly Asn Asn Ser Arg Asp His Pro Gly Met Ile Gln
 385 390 395 400
 Val Phe Leu Gly Ser Ser Gly Ala His Asp Ile Glu Gly Asn Glu Leu
 405 410 415
 Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Phe Gln His
 420 425 430
 His Lys Lys Ala Gly Ala Glu Asn Ala Leu Val Arg Val Ser Ala Ile
 435 440 445
 Leu Thr Asn Ala Pro Tyr Ile Leu Asn Leu Asp Cys Asp His Tyr Val
 450 455 460
 Asn Tyr Ser Asn Ala Val Arg Glu Ala Met Cys Phe Leu Met Asp Pro
 465 470 475 480
 Gln Val Gly Arg Asn Leu Cys Tyr Val Gln Phe Pro Gln Arg Phe Asp
 485 490 495
 Gly Ile Asp Arg Ser Asp Arg Tyr Ala Asn Arg Asn Thr Val Phe Phe
 500 505 510
 Asp Val Asn Met Lys Gly Leu Asp Gly Ile Gln Gly Pro Val Tyr Val
 515 520 525
 Gly Thr Gly Cys Val Phe Asn Arg Gln Ala Leu Tyr Gly Tyr Gly Pro
 530 535 540
 Pro Ser Met Pro Asn Leu Pro Lys Pro Ser Ser Ser Cys Ser Trp Cys
 545 550 555 560
 Gly Cys Cys Ser Cys Cys Cys Pro Ser Lys Lys Pro Thr Lys Asp Leu
 565 570 575
 Ser Glu Val Tyr Arg Asp Ser Lys Arg Glu Asp Leu Asn Ala Ala Ile
 580 585 590
 Phe Asn Leu Gly Glu Ile Asp Asn Tyr Asp Glu His Glu Arg Ser Met
 595 600 605
 Leu Ile Ser Gln Met Ser Phe Glu Lys Thr Phe Gly Leu Ser Thr Val
 610 615 620
 Phe Ile Glu Ser Thr Leu Leu Ala Asn Gly Gly Val Pro Glu Ser Ala
 625 630 635 640
 His Pro Ser Met Leu Ile Lys Glu Ala Ile His Val Ile Ser Cys Gly
 645 650 655
 Tyr Glu Glu Lys Thr Ala Trp Gly Lys Glu Ile Gly Trp Ile Tyr Gly
 660 665 670
 Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met His Cys Arg Gly
 675 680 685
 Trp Arg Ser Val Tyr Cys Met Pro Leu Arg Pro Ala Phe Lys Gly Ser
 690 695 700
 Ala Pro Ile Asn Leu Ser Asp Arg Leu His Gln Val Leu Arg Trp Ala
 705 710 715 720
 Leu Gly Ser Val Glu Ile Phe Leu Ser Arg His Cys Pro Leu Trp Tyr
 725 730 735
 Gly Phe Gly Gly Gly Arg Leu Lys Trp Leu Gln Arg Leu Ala Tyr Ile

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      740      745      750
Asn Thr Ile Val Tyr Pro Phe Thr Ser Leu Pro Leu Val Ala Tyr Cys
      755      760      765
Thr Ile Pro Ala Ile Cys Leu Leu Thr Gly Lys Phe Ile Ile Pro Thr
      770      775      780
Leu Ser Asn Leu Ala Ser Val Leu Phe Leu Gly Leu Phe Leu Ser Ile
785      790      795      800
Ile Val Thr Ser Val Leu Glu Leu Arg Trp Ser Gly Val Ser Ile Glu
      805      810      815
Asp Trp Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly Val Ser Ala
      820      825      830
His Leu Phe Ala Val Phe Gln Gly Phe Leu Lys Met Leu Ala Gly Leu
      835      840      845
Asp Thr Asn Phe Thr Val Thr Thr Lys Ala Ala Asp Asp Ala Glu Phe
      850      855      860
Gly Glu Leu Tyr Met Ile Lys Trp Thr Thr Leu Leu Ile Pro Pro Thr
865      870      875      880
Thr Leu Leu Ile Val Asn Met Val Gly Val Val Ala Gly Phe Ser Asp
      885      890      895
Ala Leu Asn Lys Gly Tyr Glu Ala Trp Gly Pro Leu Phe Gly Lys Val
      900      905      910
Phe Phe Ala Phe Trp Val Ile Leu His Leu Tyr Pro Phe Leu Lys Gly
      915      920      925
Leu Met Gly Arg Gln Asn Arg Thr Pro Thr Ile Val Val Leu Trp Ser
      930      935      940
Val Phe Trp Leu Leu Ser Ser Leu Ser Ser Gly
945      950      955

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<210> 147
<211> 124
<212> PRT
<213> Eucalyptus grandis

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      <400> 147
Leu Lys Asp Ala Ile Ile Ser His Gly Cys Phe Leu Arg Glu Cys Arg
1      5      10      15
Val Glu Arg Ser Ile Val Gly Glu Arg Ser Arg Leu Asp Ser Gly Val
      20      25      30
Glu Leu Lys Asp Thr Val Met Met Gly Ala Asp Tyr Tyr Gln Thr Glu
      35      40      45
Ser Glu Ile Ala Ser Leu Leu Ala Glu Gly Lys Val Pro Ile Gly Ile
      50      55      60
Gly Lys Asn Thr Lys Ile Arg Asn Cys Ile Ile Asp Lys Asn Ala Lys
65      70      75      80
Ile Gly Lys Asp Val Ala Ile Val Asn Lys Asp Gly Val Glu Glu Ala
      85      90      95
Asp Arg Pro Gly Asp Gly Phe Tyr Ile Arg Leu Gly Ile Thr Val Ile
      100      105      110
Leu Glu Lys Ala Thr Ile Glu Asp Gly Thr Val Ile
      115      120

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<210> 148
<211> 80
<212> PRT
<213> Pinus radiata

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<400> 148

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Asp	Thr	Ile	Ser	Asn	Gly	Gly	Leu	Gln	Arg	Ile	Tyr	Glu	Arg	Tyr	Thr
1				5				10						15	
Trp	Lys	Ile	Tyr	Ala	Glu	Lys	Leu	Met	Thr	Leu	Ala	Gly	Val	Tyr	Gly
		20					25						30		
Phe	Trp	Lys	Tyr	Val	Ser	Lys	Leu	Glu	Arg	Arg	Glu	Ser	Phe	Arg	Tyr
		35					40					45			
Leu	Glu	Met	Phe	Tyr	Ile	Leu	Lys	Tyr	Arg	Asn	Leu	Val	Lys	Thr	Val
	50					55					60				
Pro	Phe	Ser	Val	Glu	Glu	Ser	Thr	Asp	Gly	Ile	Glu	Glu	Lys	Ser	Ala
65					70					75					80

<210> 149

<211> 375

<212> DNA

<213> Eucalyptus grandis

<400> 149

atccgctggg	aggtttagga	ctgacatcag	cgatctcatg	acccaaattg	ttgagttcct	60
agccaagaac	agcgcacctc	tcaccgtcaa	catttatcca	ttcctgagtc	tctatggtaa	120
cgacaacttc	cccacgact	atgccttctt	cgatggggcc	acccagtcg	tggaacaagg	180
gatacaatac	acgaacgtgt	tcgatgccaa	cttcgacact	ctagtatcgg	ctcttaaggc	240
ggtggggccat	ggggacatga	ccctcatggt	gggtgaagtg	ggatggccta	cagatgggtga	300
caagaatgcc	aatatagcta	gtgctgttag	attctacaac	ggtcttatgc	cgaggctcgc	360
ggccaatact	gggac					375

<210> 150

<211> 356

<212> DNA

<213> Eucalyptus grandis

<400> 150

gaacaacaac	tctccattgc	tagccaacat	ctacacctac	ttcagctacg	ttggtaaccc	60
gaaagacatc	agcctgccct	acgccctatt	cacctcgccg	tcggtcgtcg	tccgagacgg	120
agcccatgag	taccggaatc	tggtcgacgc	gatgctggac	gccctctact	cgcactcga	180
gagggctggc	ggggctgccc	tcaggggtgt	ggtctcggag	agcggctggc	catccgcggg	240
cgcgttcgct	gcgacggtcg	acaacgcgag	gacatacaac	gggaatctga	tcaagcacgt	300
gaagggcggc	acgcgaagag	gccgaacggg	gcgatcgaga	cctacatatt	cgcctt	356

<210> 151

<211> 470

<212> DNA

<213> Eucalyptus grandis

<400> 151

cttcctcagg	gagaccggct	cgcctttctt	ggtgaaccgc	taccattttt	tcggcttctc	60
caaggacact	ctcgattacg	cgctgttcag	gccgaatgca	ggggtgatgg	atgagaattc	120
caaacttggt	tactactaaca	tggtggacgg	gcaattggac	gctgtctact	cggcgatgaa	180
ggtgctgggc	ttcaccgata	tcgagatcgt	gatagccgaa	acaggatggc	cctcattgtg	240
tgactcgacc	caagtcggcg	tgatgcaaaa	gacggcggca	gaatacaaca	gtaatctcat	300
ccgccatgta	tcgtcgggcg	ccggcacgcc	cctcatgcca	aaacggacat	ttgagacctt	360

caatttttgcct ctcttcaacg agaatttgaa gccgggaccg acgtgcgaga ggaacttcgg 420
actcttcagg ccggacatga caccggtgta tgatgccggg atcttgaggc 470

<210> 152
<211> 412
<212> DNA
<213> Eucalyptus grandis

<400> 152
tgattttattg tgattgccat tctctttctt tcttgattct gcattgttaca cgggtgcagca 60
actctcttat tttaacatca ctgggcagggt gtgcccttat tccttaatac aaggcagcgt 120
gcacccatta gttgaaatta atagggtatt ttggctgtct attgggcgaa aaggaggcccc 180
aatgtttctc gtactccggg ttcttctggt tctcgtcgaa catggcaaat atgtaagttt 240
cgatcggtt tccgggcttc ttgggagtc cttgcttcac gtgctgaatc aaattcgagt 300
tgtaaattct cgcgttttca atggacgttc ccttcccgc agcagatggg ccaaccactc 360
tccgacacaa ccacttctag ggaccccccg ccggatttct ctagtgcaga gt 412

<210> 153
<211> 328
<212> DNA
<213> Eucalyptus grandis

<400> 153
gaacaacaac tctccattgc tagccaacat ctacacctac ttcagctacg ttggtaaccc 60
gaaagacatc agcctgccct acgccctatt cacctcgccg tcggctcgctg tccgagacgg 120
agcccatgag taccggaatc tgttcgacgc gatgctggac gccctctact ccgcactoga 180
gagggctggc ggggctgccc tcagggtggg ggtctcggag agcggctggc catccgcggg 240
cgcgttcgct gcgacggctg acaacgcgag gacatacaac ggggaatctga tcaagcacgt 300
gaagggcggc acgccgaaga ggccgaac 328

<210> 154
<211> 373
<212> DNA
<213> Eucalyptus grandis

<400> 154
gttaacgcct accccttctt cgcctaogag tccaactccg acgtcatctc cctggactac 60
gccctcttcc gggagaaccc gggcgctcgtc gacgccggca acgggctccg ctacttcaac 120
ctcttcgacg cccagatcga cgcctcttcc gccgcatgt cggccctcaa gtacgacgac 180
atcaagatgg tcgtcaccca gacgggctgg cctccaagg gcgacgagaa cgaggctggc 240
gccagcaagg acaatgccgc cgcctacaac ggcaacctcg tccgccggat cctcaccggc 300
ggcggcaccc ctctgaggcg gcaggccgac ctacacctct acctcttcgc gctcttcaac 360
gagaacaaga agc 373

<210> 155
<211> 465
<212> DNA
<213> Eucalyptus grandis

<400> 155
cgatcatcag tttcctgggt agcaacaact ctccattgct agccaacatc tacacctact 60
tcagctacgt cggtaacccc aaagacatca gcctgcccta cgccctattc acctcgccat 120
cggctcgtcgt ccgagacggg gcccatgagt accggaacct gttcgacgag atgctggacg 180
ccctctactc cgcactcgag agggctggcg gggctgccct ccgggtgggt gtctcggaga 240
gcggctggcc atccgcgggc gcgttcgctg cgacggctga caacgcgagg acatacaacg 300
ggaatctgat caagcacgtg aagggcggca cgccgaagag gccgaacggg gcgacgaga 360
cctacatatt cgccttggtc gacgagaacc agaagcagcc ggagctggag aagcacttcg 420

ggctcttctt ccccaacaag cagcccaagt acccgctcag ctttg

465

<210> 156

<211> 359

<212> DNA

<213> Eucalyptus grandis

<400> 156

ccagatcaag	gtctcaacag	ctgtggacac	gogcatctta	ggagaatcgt	ctcctccatc	60
taagggcaca	cttaaggccg	atcacagacc	tctcctagat	cctataatca	cattcctagt	120
caacaacaag	tcccctctgc	ttgtcaacat	ctatccgtac	ttcagctaca	gcgacaatcc	180
caacgaacgc	ctcgactatg	ctctgttcac	ggcgaactcg	gttgtggtgt	cggatggagc	240
acttgggtac	cgggaacttgt	ttgacgcaat	tctagatgct	gtttactctg	cactagagaa	300
atccggcggg	gggtccctag	aagtgggtgt	gtcggagagt	ggttggccat	ctgctggcg	359

<210> 157

<211> 325

<212> DNA

<213> Eucalyptus grandis

<400> 157

ccagatcaag	gtctcaacag	ctgtggacac	gogcatctta	ggagaatcgt	ctcctccatc	60
taagggcaca	cttaaggccg	atcacagacc	tctcctagat	cctataatca	cattcctagt	120
caacaacaag	tcccctctgc	ttgtcaacat	ctatccgtac	ttcagctaca	gcgacaatcc	180
caacgaacgc	ctcgactatg	ctctgttcac	ggcgaactcg	gttgtggtgt	cggatggagc	240
acttgggtac	cgggaacttgt	ttgacgcaat	tctagatgct	gtttactctg	cactagagaa	300
atccggcggg	gggtccctag	aagtgt				325

<210> 158

<211> 362

<212> DNA

<213> Eucalyptus grandis

<400> 158

gtttgctatg	ggatgctcgg	gaacaacctg	ccgtccgcgt	cgggaagtcgt	cgcctctctac	60
aagtcccgcg	gcatcacgca	gatgagactc	tacgacccta	gccaaaccagc	tctacaagcc	120
ctgagaggct	cgaacatcga	gctcatcctc	ggcgtcccca	actcggagct	ccaggccctt	180
gcttccaacc	ccgccaacgc	gaactcgtgg	gtgcagagga	acgtgaagaa	ctactcgccc	240
ggcgtcaggt	tccgctacat	cgccgtgggc	aacgaggtga	gccctgtcaa	cggaggcact	300
gcacaattcg	ccaggttcgt	cctccccgcg	atgaggaaca	tacaggccgc	gctcagatcg	360
tc						362

<210> 159

<211> 432

<212> DNA

<213> Eucalyptus grandis

<400> 159

taaatgccga	tgtatacgaa	tcaccagaag	acaaccact	tccatccgcc	ggaacgttcc	60
gaagcgacat	aagtgatgtc	atgacccaaa	tcgtaagtt	catggctgag	aacaatgcac	120
ccttcaccgt	gaacatttac	ccgtttctga	gtctttacgg	caataatgac	ttccctttca	180
attatgcttt	cttcgacggg	gcaactccaa	ttgttgacaa	ggggattgag	tacaccaatg	240
tctttgatgc	caactttgac	actttggtgt	cggctcttaa	agcagttgga	catgggaaca	300
tgaccatcat	cataggcgag	gtgggttggc	ccacagaagg	tgacataaat	gcaaacaacg	360
gtaacgcgta	caggttttat	aatgggctct	ttacaaaact	tggagcgaat	agagggactc	420
cacttcggcc	ag					432

<210> 160
 <211> 379
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 160
 caccgtacct gtgaacgcag acgtgtacaa ctcccccgtc agcaatccccg taccatccgc 60
 tgggagggttt aggactgaca tcagcgatct catgacccaa attgtcgagt tcctagccaa 120
 gaacagcgca cctctcaccg tcaacattta tccattcctg agtctctatg gtaacgacaa 180
 cttccccatc gactatgcct tcttcgatgg ggccacccca gtcgtggaca acgggataca 240
 atacacgaac gtgttcgatg ccaacttcga cactctagta tcggctctta aggtgggtggg 300
 ccatggggac atgaccctca tgggtgggtga agtgggatgg cctacagatg gtgacaagaa 360
 tgccaatata gctagtgt 379

<210> 161
 <211> 361
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 161
 gtttgcctatg ggatgctcgg gaacaacctg ccgtccgcgt cggaagtcgt cgccctctac 60
 aagtcgccg gcatcacgca gatgagactc tacgacccta gccaacccagc tctacaagcc 120
 ctgagaggct cgaacatcga gctcatcctc ggctcccca actcggagct ccaggccctt 180
 gcttccaacc ccgccaacgc gaactcgtgg gtgcagagga acgtgaagaa ctactcgccc 240
 ggcgtcagg tccgctacat cgcggtgggc aacgaggtga gccctgtcaa cggaggcact 300
 gcacaattcg ccagggttcgt cctccccgcg atgaggaaca tacaggccgc gctcagatcg 360
 t 361

<210> 162
 <211> 402
 <212> DNA
 <213> *Pinus radiata*

<400> 162
 ggactacgct ctcttcgggc ccagcaatgg cgtggtcgat tccaagacca atttgcacta 60
 cgacaacctg ttctacgccc agatcgacgc tgggtactcg gcgctcgccg ctctgggcta 120
 cggtaaggte gaggtcaggg tctcggagac aggggtggccc tccaaggggg acgatgatga 180
 gctcggtgcc acgcccagaga atgcaaagac ttacaatggg aaccttttgg agaggctcca 240
 caagaaggag ggtactcccc tgaagcccaa tgtgagcgtg caggccttca tttttgcgct 300
 ctttaatgag aattttgaagt ccgggcctac atccgagaga aattatgggc tctttaaac 360
 agacggaacc gagacgtatg accttggctt gaaagggatt ga 402

<210> 163
 <211> 297
 <212> DNA
 <213> *Pinus radiata*

<400> 163
 ccctcgtcga tacccttctt tctgccatgg aggacttggg gtatcgcaac atcccactca 60
 tcgttactga aagcggatgg ccttctgggt gcaatgatgt ggccacgggt gacaacgctc 120
 gcgtttataa caacaatctc atccgccatg tgctctcaaa tgtagggact cccaagaggc 180
 cggaacgag cattgagacc tacatcttcg cacttttcaa cgagaacaga aaagctgggtg 240
 atgagacgga gcgtcacttt gggcttttct accctaacca acaatttgta tactctg 297

<210> 164
 <211> 427
 <212> DNA

<213> Pinus radiata

<400> 164

gcttcccacc	gtctaaaggt	gtcttcagga	acgaggttaa	agatatcatg	agttctctac	60
ttcaattcct	gtcagatcac	gggtctccct	tcatggctaa	catctatcca	tacttcagct	120
acaatgggaa	caggggttcc	atctctctgg	actacgctct	gtttaggtca	acctctaccg	180
tggtgcagga	cgagggctgc	agctacatca	acttattcga	tgccctcgtc	gatacccttc	240
tttctgccat	ggaggacttg	gggtatcgca	acatcccact	catcgttact	gaaagcggat	300
ggccttctgg	tggcaatgat	gtggccacgg	ttgacaacgc	tcgcgtttat	aacaacaatc	360
tcatccgcca	tgtgctctca	aatgtaggga	ctcccaagag	gccgggaacg	agcattgaga	420
cctacat						427

<210> 165

<211> 205

<212> DNA

<213> Pinus radiata

<400> 165

ggttgacaac	gctcgcgttt	ataacaacaa	tctcatccgc	catgtgctct	caaatgtagg	60
gactcccaag	aggccgggaa	cgagcattga	gacctacatc	ttcgcacttt	tcaacgagaa	120
cagaaaagct	ggtgatgaga	cggagcgtca	ctttgggctt	ttctacccta	accaacaatc	180
tgtatactct	ctaaacttta	ctccg				205

<210> 166

<211> 393

<212> DNA

<213> Pinus radiata

<400> 166

ggactacgct	ctgttttaggt	caacctctac	cgtgggtgcag	gacgagggtc	gcagctacat	60
caacttattc	gatgccctcg	tcgataccct	tctttctgcc	atggaggact	tggggtatcg	120
caacatccca	ctcatcggtta	ctgaaagcgg	atggccttct	ggtggcaatg	atgtggccac	180
ggttgacaac	gctcgcgttt	ataacaacaa	tctcatccgc	catgtgctct	caaatgtagg	240
gactcccaag	aggccgggaa	cgagcattga	gacctacatc	ttcgcacttt	tcaacgagaa	300
cagaaaagct	ggtgatgaga	cggagcgtca	ctttgggctt	ttctacccta	accaacaatc	360
tgtatactct	ctaaacttta	ctccgtaact	gcg			393

<210> 167

<211> 394

<212> DNA

<213> Pinus radiata

<400> 167

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caacttattc	gatgccctcg	tcgataccct	tctttctgcc	atggaggact	tggggtatcg	120
caacatccca	ctcatcggtta	ctgaaagcgg	atggccttct	ggtggcaatg	atgtggccac	180
ggttgacaac	gctcgcgttt	ataacaacaa	tctcatccgc	catgtgctct	caaatgtagg	240
gactcccaag	aggccgggaa	cgagcattga	gacctacatc	ttcgcacttt	tcaacgagaa	300
cagaaaagct	ggtgatgaga	cggagcgtca	ctttgggctt	ttctacccta	accaacaatc	360
tgtatactct	ctaaacttta	ctccgtaact	gcgt			394

<210> 168

<211> 498

<212> DNA

<213> Pinus radiata

<400> 168

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aacttattcg	atgccctcgt	cgataccctt	ctttctgcca	tggaggactt	ggggtatcgc	120
aacatcccac	tcacggttac	tgaaagcgga	tggccttctg	gtggcaatga	tgtggccacg	180
gttgacaacg	ctcgcgttta	taacaacaat	ctcatccgcc	atgtgctctc	aaatgtaggg	240
actcccaaga	ggccgggaac	gagcattgag	acctacatct	tcgcactttt	caacgagAAC	300
agaaaagctg	gtgatgagac	ggagcgtcac	tttgggcttt	tctaccttaa	ccaacaatct	360
gtatactctc	taaactttac	tccgtaactg	cgtcgcagtc	cgacgaacga	atagagccaa	420
tatgaatatg	tcctctatat	gtcaactgcc	tcgatagata	tattatgtaa	catgctcgat	480
gcagctcata	tgcttcta					498

<210> 169

<211> 278

<212> DNA

<213> Pinus radiata

<400> 169

ggactacgct	ctgttttaggt	caacctctac	cggggtgcagg	acgaggggtcg	cagctacatc	60
aacttattcg	atgccctcgt	cgataccctt	ctttctgcca	tggaggactt	ggggtatcgc	120
aacatcccac	tcacggttac	tgaaagcgga	tggccttctg	gtggcaatga	tgtggccacg	180
gttgacaacg	ctcgcgttta	taacaacaat	ctcatccgcc	atgtgctctc	aaatgtaggg	240
actcccaaga	ggccgggaac	gagcattgag	acctcatc			278

<210> 170

<211> 419

<212> DNA

<213> Pinus radiata

<400> 170

ggactacgct	ctgttttaggt	caacctctac	cgagggtgcag	gacgaggggtc	gcagctacat	60
caacttattc	gatgccctcg	tcgataccct	tctttctgcc	atggaggact	tgggggtatcg	120
caacatccca	ctcatcggtta	ctgaaagcgg	atggccttct	gggtggcaatg	atgtggccac	180
ggttgacaac	gctcgcgttt	ataacaacaa	tctcatccgc	catgtgctct	caaatgtagg	240
gactcccaag	aggccgggaa	cgagcattga	gacctacatc	ttcgcacttt	tcaacgagaa	300
cagaaaagct	ggtgatgaga	cggagcgtca	ctttgggctt	ttctacctta	accaacaatc	360
tgtatactct	ctaaacttta	ctccgtaact	gcgtcgcagt	ccgacgaacg	aatagagcc	419

<210> 171

<211> 437

<212> DNA

<213> Pinus radiata

<400> 171

gacgtacgga	tcgtatcttg	ttcccgccat	gaggaacatt	caaacagcga	ttgaaaacgt	60
caatctgcag	aataacatca	aggtctcaac	cactcactcc	tcgggctgta	ctaattggctt	120
cccaccgtct	aaaggtgtct	tcaggaacga	ggttaaagat	atcatgagtt	ctctacttca	180
attcctgtca	gatcacgggt	ctcccttcat	ggctaacatc	tatccatact	tcagctacaa	240
tgggaacagg	ggttccattt	ctctggacta	cgtctgtttt	aggtcaacct	ctaccgtggg	300
gcaggacgag	ggtcgcagct	acatcaactt	attcgatgcc	ctcgtcgata	cccttctttc	360
tgccatggag	gacttggggg	atcgcaacat	cccactcatc	gttactgaaa	gcggatggcc	420
ttctggtggc	aatgatg					437

<210> 172

<211> 343

<212> DNA

<213> Pinus radiata

<400> 172

gacgtacgga	tcgtatcttg	ttccccgcat	gaggaacatt	caaacagcga	ttgaaaacgt	60
caatctgcag	aataacatca	aggtctcaac	cactcactcc	tcgggcggtta	ctaattggctt	120
cccaccgtct	aaaggtgtct	tcaggaacna	ggttaaagat	atcatgagtt	ctctacttca	180
attcctgtca	gatcacgggt	ctcccttcat	ggctaacatc	tatccatact	tcagctacaa	240
tgggaacagg	ggttccattt	ctctggacta	cgctctgtta	ggtcaacctc	taccgtgggtg	300
caggacgagg	gtcgcagcta	catcaactta	ttcgatgccc	tcg		343

<210> 173

<211> 563

<212> DNA

<213> Pinus radiata

<400> 173

ctggattatg	ctctgtttta	gtctacgtct	acgggtgggtgc	aagacgggtga	tcacagctac	60
accaacctgt	tcgatgccat	ggttgacact	cttttgtcgg	ccatggaagc	ctcgggggtat	120
cccaacatcc	cgatcgtcat	tgccgaaagt	ggatggcctt	ctgctggcgc	ggatctggcc	180
accattgaga	atgctcagag	ctataacaat	aatcttatta	aacatgtatt	atcgaatgca	240
ggaacaccaa	agaggccagg	aatgagcâtc	gacacatâtg	ttttcgcgct	tttcaacgag	300
gatttgaaag	gcaacgagac	agagaaacac	tttggactat	tcgaccctac	tactaaacag	360
cctgtatact	ctgtcaactt	ctcaccatga	gttgtgttgg	aatccacatc	acatgtgacc	420
cgagtcatg	cagacaagcc	cttatcttca	tgcactgcta	tatgtaatct	gcaagtgtat	480
ggttatttct	aaaataaata	aatgtcaaaa	gaaagttgag	tttattttcta	aaataaataa	540
aatgcaggca	gagttccctg	agt				563

<210> 174

<211> 639

<212> DNA

<213> Pinus radiata

<400> 174

caacgaattg	cagctcatct	cctccagcca	ggacgccgcg	aatgggtggg	tcaatgacaa	60
cattcgcccc	ttctatcccg	ccaccaatat	caagtatatt	gcagtaggca	acgagggtttt	120
gataaaaacg	acgtacggat	cgtatcttgt	tcctgccatg	aggaatatcc	aaaccgcgct	180
gcagaacgcc	aatctgcaga	ataacatcaa	ggctctcgacc	actcactcct	ccgatgttag	240
cgagggtctac	ccgccgtcta	acgggtgtgtt	caaagacgag	gtcaaggaca	ccatgaagtc	300
tgtgcttcaa	ttcctgttag	atcacgggtc	tccttcatg	ggcaacatct	atccatactt	360
cagctacatc	aacaacaggg	ctcagataac	tctggactac	gctctgttca	aatccacgtc	420
tacagtgggtg	caagacaaag	gtcggagttc	aaatacttgt	tcgatgcctt	ggtcgatact	480
cttgtttcgg	ccatggaagc	cttgggatat	cccaacatcc	cactgatcgt	taccgaaagc	540
ggatggcctt	ctgctgaggc	ggatgtggcc	acagttgaca	atgctcgtac	ttataacaac	600
aatctcatcc	gccatgtctt	atcgaatgaa	gggacacca			639

<210> 175

<211> 534

<212> DNA

<213> Pinus radiata

<400> 175

aaatgggttg	gttaatgaca	atattgtccc	ctatctatca	ccagtatcaa	atatattgcg	60
gtgggcaacg	aggttttgcc	tagcacgcag	tacgtatcgt	atcttgttcc	tgccatgaac	120
aacattcaaa	ccgcgatcca	gaacgccaat	ctgcagaaca	tcaaggcttc	taccccccat	180
gccttcaatg	ttataggcaa	cagttaccgc	ccttcacagg	gagcattcag	tgacgatgtg	240
aaggatacca	tgagctctat	actcaaattt	ctgtcagata	acggggctcc	gttcatggcc	300
aatgtgtatc	catatttcag	ctacgtcggc	gacagcagca	acattcatct	ggaactacgt	360
ctctttcagc	ccacggctac	ggcggtgaca	gacggagatc	acagctacag	caatttgttt	420
gatgccatgg	tggattctat	tttctccgca	atggaagcct	tgggatattc	caacatccca	480
cttattgtta	ctgaaagcgg	atggccatct	gctggcgcgg	atgcggccac	aact	534

<210> 176
 <211> 345
 <212> DNA
 <213> Pinus radiata

<400> 176
 ggттаасgаg cacattgtgc ccttctatcc cgccaccaat gtcaaataca ttgctgtggg 60
 aaacgagggt ttgataggcg atgccaacaa cgtaccctat cttgttccgg ccatgaacaa 120
 cattcaaact gcgatccaga acgctaaact gcaggatagc atcaagggtct ctaccaccca 180
 caggccggat gttagcagcg gctaccgcc gtctaaagga gtcttcgtag atgctgtgaa 240
 ggacacgatg ggccaaatac tcaaatttct gtcacagaac ggcggtccct tcatggcgga 300
 tgtctatcca tacttcagct acatcggaac cccaagcaac attca 345

<210> 177
 <211> 339
 <212> DNA
 <213> Pinus radiata

<400> 177
 cccgatcgtc attaccgaaa gtggatggcc ttctgctggc gcggaagtgg ccaccattga 60
 gaatgctcag acctataaca ataattctat taaacatgta ttatcgaatg caggaacacc 120
 aaagaggcca ggaatgagca tcgacacata tgttttcgcg cttttcaacg aggatttgaa 180
 gcaaggcgac gagacataga aacactttgg actattcgac cctaatacta aacagcctgt 240
 atactctgtc aactttctcac catgagttgt gttggaatcc acatcacatg tgacccgagt 300
 cgatgcagac aagcccttat cttcatgcac tgctatatg 339

<210> 178
 <211> 313
 <212> DNA
 <213> Pinus radiata

<400> 178
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 cagacttaca acaacaatct gatcaaacat gtgctttcaa atgcaggaac gccaaagagg 120
 cctggacagc acattgatac atacattttc gctcttttca acgagaattt gaaaggcggg 180
 gacgagccag aacgacattt tggacttttc tctctgacg aaaaccttgt ttaccctgtt 240
 aacttctccc cttaaattca tctgatctgt gttttgcatt agaatttcca gtattaccca 300
 ttttctcaca ata 313

<210> 179
 <211> 460
 <212> DNA
 <213> Pinus radiata

<400> 179
 cgacaacatt cgccaattct atccggccac caacatcaaa tacatcgctg ttggcaacga 60
 agttttttca agtgaaaatc ggcagcatct tccatatctc gttcctgcca tgagaaacat 120
 tcaaaccgca gtccagaacg ccaatctgca gagctccata aaggctctcca ctaccacgc 180
 cacgtctgtt ctgggaaact cgtatcccc ttctcaggga gaattcgctg atgaattgaa 240
 gagtagcatg agcgatgtac ttaactttct ggcagagaat gggctctcct tcatgggctaa 300
 cgtgtatccc tacttcagtt acatttataa ccaggcccaa atctcgttag actatgcttt 360
 gtttaaattcc gcggatcccc tgggtgagtga tgaaggctgt ctctataaaa gcttggtcga 420
 tgcgctggtg gattctctga tttccgctat ggagaaatcg 460

<210> 180
 <211> 296

<212> DNA

<213> Pinus radiata

<400> 180

ttatggcggc	gtctatccat	acttcagcta	catcggcaac	acaaaagaca	tttctctgga	60
ttatgctctg	tttaagtcta	cgtctacgg	ggtgcaagac	ggtgatcaca	gctacaccaa	120
cctgttcgat	gccatgggtg	atactctttt	gtcggccatg	gaagcctctg	ggtatcccaa	180
catcccgatc	gtcattaccg	aaagtggatg	gccttctgct	ggcgcggaag	tggccaccat	240
tgagaatgct	cagacctata	acaataatct	tattaaacat	gtattatcga	atgcag	296

<210> 181

<211> 351

<212> DNA

<213> Pinus radiata

<400> 181

tacgtaccct	atcttgttcc	ggccatgaag	aacattcaaa	ctgcgatcca	gaacgctaaa	60
ctgcaggata	gcatcaaggt	ctctaccacc	cacaggccgg	atgttagcag	cggctaccgg	120
ccgtctaaag	gagtcttcgt	agatgctgtg	aaagacacga	tgagccaaat	actcaatttt	180
ctgtcacaga	acgggtggtcc	cttcatggcg	gacgtctatc	catacttcag	ctacatcggc	240
aacacaaaag	acattttctct	ggattatgct	ctgtttaagt	ctacgtctac	ggtgggtgcaa	300
gacgggtgatc	acagctacac	caacctgttc	gatgccatgg	gtgatactct	t	351

<210> 182

<211> 457

<212> DNA

<213> Pinus radiata

<400> 182

caatcttcca	tctccagacg	aggtggtaac	tttcatgaag	tccaacaaca	ttgggaaaac	60
gagaattttac	caggaaaacg	atgttgtaact	gcaagctttc	gcgaattctg	gtatcgatgt	120
aatagtgggt	gtcgttaacg	aagaactgaa	gaacatatct	tccagccaag	actcggcaaa	180
ccgttgggtt	aacgagcaca	ttgtgccctt	ctatcccgcc	accaatgtca	aatacattgc	240
agtgggaaac	gaggttttga	aaagcttggg	caacgttcag	tacataccct	atcttgttcc	300
ggccatgaac	aacattcaaa	ctgcgatcca	gaacgctaaa	ctgcagaata	gcatcaaggt	360
ctctaccacc	cacaggccgg	atgttagcag	cggcaacctg	ccgtctgaag	gagtccttcat	420
agatgctgta	aaggacacga	tgagccaaat	actcaat			457

<210> 183

<211> 358

<212> DNA

<213> Pinus radiata

<400> 183

ctttgatgaa	gtccaacaac	attgggaaaa	cgagaattta	ccaggaaaac	aaagttgtac	60
tgcaagcttt	ggcgaattct	ggtatcgatg	taatagtggg	tgctcgtaac	agcgaactgg	120
aggacatatc	ttccagccaa	gactcggcaa	accgttgggt	taacgagaac	attgtgccct	180
tctatccgcg	caccaatgtc	aaatacattg	cagtgggaaa	cgaagttttg	ataggcaacg	240
ttcagtagct	accctatctt	gttcgggcca	tgaagaacat	tcaaactgcg	atccagaacg	300
ctaaactgca	ggatagcatc	aaggtctcta	ccaccacacg	gccggatggt	agcagcgg	358

<210> 184

<211> 348

<212> DNA

<213> Pinus radiata

<400> 184

cgtaccctat	cttggtccgg	ccatgaagaa	cattcaaact	gcgatccaga	acgctaaact	60
ccaggatagc	atcaaggctc	ctaccacca	caggccggat	gtagcagcg	gctaccgccc	120
gtctaaagga	gtcttcgtag	atgctgcgaa	ggacacgatg	agccaaatac	tcaatttttt	180
gtcacagaac	ggtggtcctt	tcatggcgga	cgtctatcca	tacttcagct	acatcggcaa	240
cacaaaagac	atttctctgg	attatgctct	gtttaagtct	acgtctacgg	tggtgcaaga	300
cggtgatcac	agctacacca	acctgttcga	tgccatgggt	gatactct		348

<210> 185

<211> 594

<212> DNA

<213> Pinus radiata

<400> 185

aactttgatg	aagtccaaca	gcattgggaa	aacgagaatt	taccaggaaa	acaaagttgg	60
actgcaagct	ttggcgaatt	ctggtatcga	tgtaatagtg	ggtgtgctaa	cagcgaactg	120
gaggacatat	cttcagcca	agactcggca	aaccgttggg	ttaacgagaa	cattgtgccc	180
ttctatcccg	ccaccaatgt	caaatacatt	gcagtgggaa	acgaagtttt	gataggcaac	240
gttcagtagc	taccctatct	tggtccggcc	atgaagaaca	ttcaaactgc	gatccagaac	300
gctaaactgc	aggatagcat	caagggtctc	accacccaca	ggccggatgt	tagcagcggc	360
taccgcccgt	ctaaaggagt	cttcgtagat	gctgtgaaag	acacgatgag	ccaaatactc	420
aattttctgt	cacagaacgg	tggtcccttc	atggcggacg	tctatccata	cttcagctac	480
atcggcaaca	caaaagacat	ttctctggat	tatgctctgt	ttaagtctac	gtctacgggg	540
tgcaagacgg	tgatcacagc	tacaccaacc	tggtcgatgc	catggttgat	actc	594

<210> 186

<211> 360

<212> DNA

<213> Eucalyptus grandis

<400> 186

cgacatgttc	gacaaggccg	ctctcttcgc	tttctcttta	ctcgccgtca	cttacggtca	60
gcaggctcgg	accagactg	ctgaatctca	tccgcctctt	acctggcaaa	aatgtacgac	120
tgctgggtgga	tgtaccaatg	tttctggtgg	tagtggtgtc	attgacgcga	attggcgttg	180
ggtccattcc	atcaacggta	ctactaactg	ttacactggg	caagcatgga	acacgacact	240
ctgtccggat	gacacgactt	gcgcagccaa	ctgcgctttg	gatggtgctg	attactctgg	300
cacttatggc	attactactt	ccggcaatgc	tcttaccctc	aagttcgtca	ctcaatcttc	360

<210> 187

<211> 397

<212> DNA

<213> Eucalyptus grandis

<400> 187

atccacccta	gcgagcagga	tgaggctctc	caaatactac	ttgaaacttt	tagatgtgtc	60
ccgacttttt	tgccctctga	tttgtttact	agatactatc	atgggttctg	caagcaacag	120
ctttggccat	tgttccatta	catggtgcct	ttgtcgccctg	acctcgggtg	tccgttcaac	180
cggtccttgt	ggcaggctta	tgtctccgtc	aataagattt	tgcgagatag	gatcatggaa	240
gtgattaatc	cagaggatga	tttcgtttgg	gtacacgatt	accatttgat	ggtgttgccg	300
actttcttga	ggaaaagggt	caatagagt	aagcttggct	tcttccttca	cagcccattc	360
ccctcttcag	agatttacia	gactctgccg	atcagggt			397

<210> 188

<211> 531

<212> DNA

<213> Eucalyptus grandis

<400> 188

ggaagacaaa	gagaagagct	atatttcttg	attatgacgg	cactgttggt	cctgaaactt	60
ctatcagtaa	aatgccaggg	cctgaagtcc	tttctgtttt	gaacgctctc	tgtaatgatc	120
caatgaacac	tgtatttatt	atcagtgggc	gggggagaaa	atcattaagt	gagtggcttt	180
cttcttgcaa	gaagcttgga	atagccgctg	agcatgggta	ttttataagg	tggaacagtg	240
cagccgagtg	ggaaaccagt	tcattgtctg	ctgatcttga	ttggaagaat	accgtggaac	300
ctataatgaa	ttcatacaca	gaggcaactg	atggctcaag	catagagtac	aaggagagcg	360
ctttggtgtg	gcaccatcag	gatgcagacc	ctgatttttg	atcatgccaa	gccaaggaat	420
tgttggctca	tctagagagt	gtgctcgcaa	atgaacctgc	agttgttaag	aggggacagc	480
aaattgtgga	ggtcaaacct	cagggagtaa	gcaaaggatt	ggttgcagag	a	531

<210> 189

<211> 329

<212> DNA

<213> Eucalyptus grandis

<400> 189

atcctccaga	aatcagcttt	tgttgtctta	ctcctcaaaa	agtgaggcac	ttgccagttc	60
cttgagaaac	gagactacgt	cgtcagagga	tgtaagcatg	tagcgagcat	ttgtacgggt	120
ccgccccaca	gcgcatgaga	aatagttttc	ccccttgaga	tcgagcacat	tccaagatat	180
tttatccgga	gatgacctcc	tcccactacc	actggcatgg	ttgttagttc	ttttctcagg	240
gtttggtaaa	ggtcggtgtg	tcttcaccgc	agacgctttt	gacctgcttt	tactagcttg	300
aagcttcaat	gaagatcggt	tctcccctg				329

<210> 190

<211> 503

<212> DNA

<213> Eucalyptus grandis

<400> 190

acaaaaagcc	gagcgattct	tttggattat	gatggagcta	tgggggtcaac	aggatccaat	60
tccatcagtg	tgatacctac	tgctgagaca	gttggaactca	ttaacagttt	tgcccgagat	120
cccaagaatg	ttgtcttcct	tgctcagtgga	aaggagcgag	ttatcctaag	taaattgggtc	180
tcacgtgtg	atagacttgg	gttagcagca	gagcatggct	atcttcttag	gccccaaaca	240
gaaggagatt	gggaaacttg	tgtttcggtg	acagattttg	actggaaaca	gacagctgag	300
ccggttatga	gattatacat	ggaaacaact	gatggctcta	ctatagaaat	caaagagagt	360
tcaattgtgt	ggaactacca	gtgcgcagat	ccagattttg	gtttttgcca	ggcaaaggaa	420
cttttagatc	acctggaaaag	tgttcttgca	aatgaacctg	tttctgtcaa	gagtggccaa	480
cacattgtgg	aagttaaacc	tca				503

<210> 191

<211> 398

<212> DNA

<213> Eucalyptus grandis

<400> 191

acgacactag	aggatccaaa	gtctcgcaaa	aagggattga	ggtcataaat	ccagagggatg	60
actatgtctg	gatacatgat	tatcattgga	gggggttgcc	tactttctta	agaaggaagt	120
tcacatagct	gaggatgggg	ttctttctcc	atagcccttt	tccatcatca	gagatatata	180
ggactcttcc	agnnagggag	gagatactca	aagcgcttct	taatgctgac	ctgattgggtt	240
tccacacggt	cgattatgct	cggcattttc	tatcctgttg	cagtagaatc	tggggngtgg	300
agtaccagtc	gaaaaggggt	tatatcggtt	tggaatatta	tggaagaaca	attgggggtaa	360
agatcatgcc	tgttggggtc	cacatggggc	agattcag			398

<210> 191

<211> 457

<212> DNA

<213> Eucalyptus grandis

<400> 192

ggcaggctta	tgtctccgtc	aataagattt	tcgcagatag	gatcatggaa	gtgattaatc	60
cagaggatga	tttcgtttgg	gtacacgatt	accatttgat	ggtggtgccg	actttcttga	120
ggaaaagggt	caatagagt	aagcttggct	tcttccttca	cagccattc	ccctcttcag	180
agatttacia	gactctgccg	atcanggagg	agcttctgan	ggctttcctg	aattctgatt	240
tgatagggtt	ccacactttc	gactatgcac	gccatttcct	gtcttggtgt	agtcggatgc	300
ttggtcttac	ctatgaatcg	aagaggggtt	atataggcct	ggactattat	ggtcggactg	360
ttagtatcaa	aattcttcca	gttgggatac	acatgggaca	attgcagtcc	gttttaagcc	420
ttcccagagac	tgaagccaag	gtggccgaac	taattaa			457

<210> 193

<211> 359

<212> DNA

<213> Eucalyptus grandis

<400> 193

gcctgacctc	ggtggtcggt	tcaaccggtc	cttgtggcag	gcttatgtct	ccgtcaataa	60
gatttttcgca	gataggatca	tggaagtgat	taatccagag	gatgatttcg	tttgggtaca	120
cgattaccat	ttgatgggtg	tgccgacttt	cttgaggaaa	aggttcaata	gagtgaagct	180
tggtctcttc	cttcacagcc	cattcccctc	ttcagagatt	tacaagactc	tgccgatcag	240
ggaggagctt	ctgagggtt	tcctgaattc	tgatttgata	gggttccaca	ctttcgacta	300
tgacgccat	ttcctgtctt	gtttagtctg	gatgcttggt	cttacctatg	aatcgaaga	359

<210> 194

<211> 401

<212> DNA

<213> Eucalyptus grandis

<400> 194

ttggcttctt	ccttcacagc	ccattcccct	cttcagagat	ttacaagact	ctgccgatca	60
gggaggagct	tctgagggtt	ttcctgaatt	ctgatttgat	agggttccac	actttcgact	120
atgcacgcca	tttcctgtct	tggtgtagtc	ggatgcttgg	tcttacctat	gaatcgaaga	180
ggggttatat	aggcctggac	tattatggtc	ggactgttag	tatcaaaatt	cttcagttg	240
ggatacacat	gggacaattg	cagtccgttt	taagccttcc	cgagactgaa	gccaagggtg	300
ccgaactaat	taagcagttt	ggtggtcggg	gtaggacaat	gttgctcggg	gtagatgaca	360
tggatatattt	taaaggaatt	agcttgaaac	tggtggccat	g		401

<210> 195

<211> 364

<212> DNA

<213> Eucalyptus grandis

<400> 195

ccgactttct	tgaggaaaag	gttcaataga	gtgaagcttg	gcttcttctt	tcacagccca	60
ttcccctctt	cagagattta	caagactctg	ccgatcaggg	aggagcttct	gagggttttc	120
ctgaattctg	atttgatagg	gttccacact	ttcgactatg	cacgccattt	cctgtcttgt	180
tgtagtcgga	tgcttggtct	tacctatgaa	tcgaagaggg	gttatatagg	cctggactat	240
tatggtcgga	ctgttagtat	caaaattctt	ccagttggga	tacacatggg	acaattgcag	300
tccgttttaa	gccttcccga	gactgaagcc	aagggtggccg	aactaattaa	gcagtttggt	360
ggtc						364

<210> 196

<211> 400

<212> DNA

<213> Pinus radiata

<400> 196

gttttaatgc	aacaatgact	gcacaagttg	atacacctgg	tagaagaggt	catgatcaaa	60
tcaaagagat	gaagctcctt	ttgcatcctg	atctgggtga	aaccctttca	gttttatgta	120
aggatccaaa	aactactata	gttgtgctta	gcggaagtga	aagaaatgtc	ttagatgaga	180
attttggcga	actcgacatg	tggttagcag	cagaaaatgg	tatgtttctg	cgccatacga	240
aaggagaatg	gatgatcaca	atgccagaat	atcttaatat	ggactggatg	gagagtgtaa	300
agcttgTTTT	tgattatttc	aaagaaaggc	acctcgatcg	tatgtngagg	ttcgagaaac	360
ctctttagtt	tggaacctata	agtatgcaga	tgttgaattt			400

<210> 197

<211> 298

<212> DNA

<213> Eucalyptus grandis

<400> 197

taaaaccgnt	agcagcaagt	gctgtccatt	acaatgggtg	attggagtat	gatgctcaca	60
gtttgtatgg	tttctcgcaa	tcaattgcta	ctcaciaaagc	actccaaggg	ctccagggaa	120
agagaccctt	catattgtcg	cgctcgacgt	acgtgggctc	cggaagtat	gtngctcact	180
ggaccggaga	taaccaagg	aattgggaaa	atctgaagta	ttccatctcc	actatgctga	240
atttcggcat	attcggagt	ccgatggctg	gtgcagacat	atgcgggttc	taccccaa	298

<210> 198

<211> 402

<212> DNA

<213> Eucalyptus grandis

<400> 198

ctggaccgga	gataaccaag	gcaattggga	aaatttgaag	tattccatct	ccactatgct	60
gaattttggc	atattcggag	tgccgatggt	cggtgcagac	atatgaggct	tctaccggc	120
cccgaactgag	gagctttgca	accgctggat	tgaaagtcgg	tgctttntac	ccntntttt	180
tngggggggn	tttccccnnt	tttttttnc	cnaaaagggg	tttttaagtg	gactcagtag	240
ccgaatctgc	taggaatgct	cttggcatga	gatataggct	cctaccttac	ttgtacactc	300
tcaattacca	agctcatacg	acgggagccc	cgattgcacg	gcctcttttc	ttttcattcc	360
ccgattacgt	ggagagttac	ggattgagca	cccagttttt	gc		402

<210> 199

<211> 441

<212> DNA

<213> Pinus radiata

<400> 199

atcgacccag	ggattggcgt	taacacgagc	tacgggacgt	tccagcgagg	aatggcggac	60
gacgttttca	taaagcacga	cgggagtcgg	ttcttgggtc	aggtgtggcc	cggcgcctg	120
tactttccgg	acttcttgaa	cccaaagacg	gtggatttct	gggccgacga	gatctcccgc	180
ttccacaaaa	tggtccccgt	ggacggctctc	tggatcgaca	tgaacgaggt	ctccaatttc	240
tgcagtggca	agtgtcccat	ccccacaaac	cggagctgcc	cgggcacggg	tttcccatgg	300
gactgctgcc	tcgactgcac	aaacatcacc	gccacccgat	gggacgtgcc	accctaccag	360
atcaacgcct	ccggtaccca	ggtcccgtcg	gggttcaaga	ccatcgccac	cagctccgtc	420
cactacaacg	gcgtcctcga	g				441

<210> 200

<211> 481

<212> DNA

<213> Pinus radiata

<400> 200

ctataacaaa	tctcagatag	ctctggatgt	tatatggaac	gatgatgacc	acatggatgg	60
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agccaaagac ttcacccttg accctatcaa ctatcctgaa tataagctgc gtcccttcct 120
tgaccgaatt catgccaatg gaatgagata tgtcgtcctt atcgacccag ggattggcgt 180
taacacgagc tacgggacgt tccagcgagg aatggcggac gacgttttca taaagcacga 240
cgggagtcg ttcttgggtc aggtgtggcc cggcgccgtg tactttccgg acttcctgaa 300
cccaaagacg gtggatttct gggccgacga gatctcccgc ttccaccaa tgggtcccgt 360
ggacggtctc tggatcgaca tgaacgaggt ctccaatttc tgcagtggca agtgctccat 420
ccccacaaac cggagctgcc cgggcacggt ttcccatggg actgctgcct cgactgcaca 480
a 481

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<210> 201
 <211> 484
 <212> DNA
 <213> Pinus radiata

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<400> 201
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accataagca tcacggttcc aaatagtcct agtagtggtg gaaggatcga ggcggaagt 120
gttggtatgt tcgccgagac catagatgtt cgcgttatta gggacgacgg tcttaagtcg 180
gagatattgc tcctcaaaca caagcgtgct acccttggtg tcgaacaaca cctcgccaga 240
ctttttacgg acaacgctga acgagaacgg gctcggaaca tatttgaaga cgatatctgc 300
cgaggacgcc gtgaccttgg atgttggacg ggggaaaacc tcctcgggga cttcatatcg 360
cttgcccgcc gaatcaccaa tcttgacatg aactcgagac tcgtcttcgt acgtaacctg 420
caacttgagc tgctgaacgt cactgccgta gatcccacag gtagcggcga gagtcaggtc 480
agcg 484

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<210> 202
 <211> 418
 <212> DNA
 <213> Pinus radiata

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<400> 202
caatgcaggt ggggatacaa gaacgtatca gacataacga atgtggtgga aaactataac 60
aaatctcaga tacctctgga tgttatatgg aacgatgatg accacatgga tggagccaaa 120
gacttcaccc ttgaccctat caactatcct gaatataagc tgcgtccctt ccttgaccga 180
attcatgcc aatggaatgag atatgtcgtc cttatcgacc cagggattgg cgttaacacg 240
agctacggga cgttccagcg aggaatggcg gacgacgttt tcataaagca cgacgggagt 300
ccgttcttgg gtcagggtgtg gcccggcgcc gtgtactttc cggacttcct gaacccaaag 360
acggtggatt tctgggcccga cgagatctcc cgcttcacc aaatgggtccc cgtggacg 418

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<210> 203
 <211> 395
 <212> DNA
 <213> Pinus radiata

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<400> 203
caatgcaggt ggggatacaa gaacgtatca nacataacga atgtggtgga aaactataac 60
aaatctcaga tacctctgga tgttatatgg aacgatgatg accacatgga tggagccaaa 120
gacttcaccc ttgaccctat caactatcct gaatataagc tgcgtccctt ccttgaccga 180
attcatgcc aatggaatgag atatgtcgtc cttatcgacc cagggattgg cgttaacacg 240
agctacggga cgttccagcg aggaatggcg gacgacgttt tcataaagca cgacgggagt 300
ccgttcttgg gtcagggtgtg gcccggcgcc gtgtactttc cggacttcct gaacccaaag 360
acggtggatt tctgggcccga cgagatctcc cgctt 395

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<210> 204
 <211> 390
 <212> DNA
 <213> Pinus radiata

<400> 204

cgctccttate	gacccagggg	ttggcggttaa	cacgagctac	ggcacggttcc	agcgaggaat	60
ggcgggacgac	gttttcataa	agcacgacgg	gagtcggttc	ttgggtcagg	tgtggcccgg	120
cgccgtgtac	tttccggact	tcctgaaccc	aaagacggtg	gattttctggg	ccgacgagat	180
ctcccgccttc	caccaaattg	tccccgtgga	cggtctctgg	atcgacatga	acgaggtctc	240
caatttctgc	agtggcaagt	gtcccatccc	cacaaaccgg	agctgcccgg	gcacggggtt	300
cccatgggac	tgtgcctcg	actgcacaaa	catcaccgcc	acccgatggg	acgtgccacc	360
ctaccagatc	aacgcctcgg	tacccaagtc				390

<210> 205

<211> 245

<212> DNA

<213> Eucalyptus grandis

<400> 205

ccaccgcaga	atccccccgg	cagtcctctg	aatcatgttc	ttgtctgggtg	gacaatctga	60
agttgaagcc	accctgaact	tgaatgccat	gaaccaatcg	ncaaaccggt	ggcacgnatc	120
tttctcatat	gcccagagccc	tccagaacac	ctgcttgaag	acatggggag	gaagaccgga	180
gaacgtgaag	ccagcccagg	aaaccttgct	tgtccgcgcc	aagggcaaat	ctcttgctca	240
aactt						245

<210> 206

<211> 510

<212> DNA

<213> Eucalyptus grandis

<400> 206

tgagaagcga	gagaagcaaa	gcaagaagca	atggcctctg	cttctgcaac	gctgctcaag	60
tcattccccag	tccttgacaa	gtccgagtg	gtgaagggtc	agtctatccg	ccacgcctcg	120
gccaccaccg	tgcgtgcca	tcctgccacc	gcctctgtcc	tcactgtcaa	agccagtaat	180
gccgatgaac	tcgtcaagac	cgcgaaaacc	atcgcacgc	caggacgtgg	aattttggcc	240
atggacgaat	caaatgccac	ttgcgggaag	cgtcttgcc	cgattggact	agagaacacc	300
gaagccaacc	gccaaagccta	cagaactctg	ctgggtgacg	ttccagggtc	cggcgagtac	360
atctccgggtg	ccatcctctt	cgaggagact	ctctaccagt	ccacagtcga	tggacgcaag	420
atggttgatg	tacttggtga	gcagaacatc	gtccccggta	tcaaagtcga	caagggttgg	480
tgctttggcg	gtttaacaat	gagtctggtg				510

<210> 207

<211> 413

<212> DNA

<213> Eucalyptus grandis

<400> 207

tggtgccttt	ggctgggtcc	aacgacgagt	cctgggtgcc	agggctcgat	ggattagcat	60
cccgcacggc	tgtttactac	cagcagggtg	cacgctttgc	taaatggaga	actgtgtgta	120
gcatccccaa	tggcccatct	gccctggccg	tgaagggaagc	cgcctggggg	cttggccgct	180
acgtgccat	ttgccaagac	aatggattga	ccccaatagt	ggagccggag	atcttgctgg	240
atggagagca	cgggatcgag	aggacattcg	aggtggccct	gaagggtgtg	gcggaggtgt	300
tctactacat	ggctgagaac	aatgtactgt	tcgagggcat	cctcttgaag	cccagcatgg	360
tcactcccgg	cgctgagtg	aaagagaggg	ccactcccc	gcaagtggcc	gag	413

<210> 208

<211> 434

<212> DNA

<213> Eucalyptus grandis

<400> 208

gctgtccctg	ccgttgtgtt	tttgtctggt	gggcagagt	aggaggaggc	aaccctcaac	60
ctcaatgcca	tgaacaagct	caagggaag	aaaccatggt	ctctttcctt	ctcctttgga	120
cgggctcttc	agcagagcac	tttgaagtct	tgggntggaa	aggaggagaa	cgtgcccaag	180
gcacaggctg	cattatttac	taggtgcaag	gcaaactcag	aggcaactct	tggtacttac	240
aagggtgacg	caaagcttgg	cgagggaagt	gctgaaagtc	tccatgttaa	ggattacaag	300
tactaagggtg	cttttgctgg	cggtattttc	tgcttttcat	ttgagaaaaa	taggtgtctg	360
gagatatcct	atttttgtac	taggataata	agcatgactg	tactgtactg	gtaatgcatt	420
ttcattgatg	ttgt					434

<210> 209

<211> 350

<212> DNA

<213> Eucalyptus grandis

<400> 209

acttgtagtc	cttaacatgg	agagactcgg	aagcacccctc	gccaagttga	gcatcacccct	60
tgtatgttcc	aagagttgcg	tccgagttgg	ccttgcatct	tctgagaagt	gcagcctgtg	120
ccttgggaat	gttctcttcc	tttccagccc	acgccttcaa	ggtgctctgc	tgtaggggccc	180
gacaaaaaga	gaaggagagg	ctccatggct	tcttgccctt	gagcttggtc	atggcattga	240
ggttcaaagt	ggctcctccc	tcactctgcc	caccggacaa	gaagacaatg	gccggaacag	300
caggaggcac	tgttcgctgc	agggcacgaa	cggtgtactc	agcaatgacc		350

<210> 210

<211> 455

<212> DNA

<213> Eucalyptus grandis

<400> 210

gcgaaaaaca	atggcctcgg	cttctctcct	caagtcactct	cccgtgctcg	acaagtcgga	60
gtttgtgaag	ggcacgcaga	ctctccgcac	cccatctctc	gccgcgctcc	gctaccaccc	120
caccaccgcc	ccctccgctc	tcgtcgtaaa	agccagtgcc	tatgctgatg	agctcgtaaa	180
gactgcgaaa	acagttgcat	caccggggag	aggaatcctg	gccatggacg	agtcaaacgc	240
aacctgcggg	aagcgtttgg	cgtcgatcgg	gctagagaac	accgaggcca	accgccaggc	300
ctacaggaca	ctcctggtca	gtgctccggg	gcttgggccag	tacatctctg	gtgctatcct	360
cttcgaggag	actctctacc	aatccaccac	cgacggccgc	aagatggctg	acgtcctcgt	420
tgagcagaac	attgtccctg	gtattaaagt	cgaca			455

<210> 211

<211> 509

<212> DNA

<213> Eucalyptus grandis

<400> 211

ggaggagagaa	gctttgagaa	gagataaggt	aacacagttt	ttgcttgccg	ggctgtgctc	60
gagtttgccc	tttgcaagcg	aaaaacaatg	gcctcggctt	ctctcctcaa	gtcatctccc	120
gtgctcgaca	agtcggagtt	tgtgaagggc	acgcagactc	tccgcacccc	atctctcgcc	180
gccgtccgct	accacccac	caccgcccc	tccgctctcg	tcgtcaaagc	cagtgcctat	240
gctgatgagc	tcgtcaagac	tgcgaaaaca	gttgcatcac	ccgggagagg	aatcctggcc	300
atggacgagt	caaacgcaac	ctgcgggaag	cgtttgccgt	cgatcgggct	agagaacacc	360
gaggccaacc	gccaggccta	caggacactc	ctggtcagt	ctccggggct	tgccagctac	420
atctctggtg	ctatcctctt	cgaggagact	ctctaccaat	ccaccaccga	cggccgcaag	480
atggctcgacg	tcctcgttga	gcagaacat				509

<210> 212

<211> 364

<212> DNA

<213> Eucalyptus grandis

<400> 212

atttgaagtt gctcagaagg tttgggctga ggttttctac tacctggctg agaacaatgt	60
catgttttgag ggtatcctcc ttaagccag catggtcact cctggtgccg agtgcaagga	120
caaggccact cctcaacaag tcgctgaata caccctcaag cttctccacc gcagaatccc	180
cccggcagtc cctggaatca tgttcttgct tgggtggacaa tctgaagttg aagccaccct	240
gaacttgaat gccatgaacc aatcgccaaa cccgtggcac gtatctttct catacgccc	300
agccctccag aacacctgct tgaagacatg gggaggaaga cccgagaacg tgaagccagc	360
ccag	364

<210> 213

<211> 372

<212> DNA

<213> Eucalyptus grandis

<400> 213

ctgaagttga agccaccctg aacttgaatg ccatgaacca atcgccaaac cccgtggcacg	60
tatctttctc atacgcccga gccctccaga acacctgctt gaagacatgg ggaggaagac	120
ccgagaacgt gaagccagcc caggaaacct tgcttgctcc cgccaaggcc aactctcttg	180
ctcagcttg caagtacaca ggtgagggcg agtccgagga ggccaagaaa ggaatgttcg	240
tcaagggcta cgtgtattaa gctgttctact gtaggtggaa gtggatgatc aaagtggga	300
gacttaagaa ttgatccctc tcagcgtgtt atgattatag ccacggagac tatttttgca	360
catcgaatgt ac	372

<210> 214

<211> 471

<212> DNA

<213> Eucalyptus grandis

<400> 214

atattaacct cctcatataa aaatataaaa cttcataaag aagtcgcaaa cattcaacca	60
tcacaacatc aatgaaaatg cattaccagt acagtcatgc ttattatcct agtacaaaaa	120
taggatattc ccagacacct atttttctta aaaggaaaag cagaaaatac cgccagcaaa	180
aaagcacctt agtacttgta atccttaaca tggagacttt cagcagctcc ctgcgcaagc	240
tttgctgcac ccttgtaagt accaagagtt gcctctgagt ttgccttgca cctagtaaat	300
aatgcagcct gtgccttggg cacgttctcc tctttccag cccaagactt caaagtgtct	360
tgctgaagag cccgtccaaa ggagaaggaa agagaccatg gtttcttgcc cttgagcttg	420
ttcatggcat tgaggttgag gggtgcctcc tctcactct gccaccaga c	471

<210> 215

<211> 465

<212> DNA

<213> Eucalyptus grandis

<400> 215

acggtcagta atccacgaaa caaacgaagc acaagtaata gtatcgcagc aaagcctaga	60
tccgcccctc agtacttgta gtccttaaca tggagagact cggaagcacc ctgcgcaagt	120
tgagcatcac ccttgatagt tccaagagtt gcgtccgagt tggccttgca tcttctgaga	180
agtgcagcct gtgccttggg aatgttctct tctttccag cccacgcctt caaggtgtct	240
tgctgtaggg cccgaccaa agagaaggag aggtccatg gcttcttgcc cttgagcttg	300
ttcatggcat tgaggttcaa agtggcctcc tctcactct gccaccgga caagaagaca	360
atggccggaa cagcaggagg cactgttcgc tgcagggcac gaacggtgta ctcagcaatg	420
acctccggag caaccttggg ggcattctgat ccgggggtga ccatg	465

<210> 216

<211> 484

<212> DNA

<213> Eucalyptus grandis

<400> 216

ctcatataaa	aatataaaac	ttcataaaga	agtcgcaaac	attcaaccat	cacaacatca	60
atgaaaatgc	attaccagta	cagtcatgct	tattatccta	gtacaaaaat	aggatatctc	120
cagacaccta	tttttctcaa	atgaaaagca	gaaaataccg	ccagcaaaaa	agcaccttag	180
tacttgtaat	ccttaacatg	gagactttca	gcagctccct	cgccaagctt	tgcgtcacc	240
ttgtaagtac	caagagttgc	ctctgagttt	gccttgcacc	tagtaaataa	tgcagcctgt	300
gccttgggca	cgttctcctc	ctttccagcc	caagacttca	aagtgtctctg	ctgaagagcc	360
cgtccaaagg	agaaggaaaag	agaccatggt	ttcttgccct	tgagcttggt	catggcattg	420
aggttgaggg	ttgcctcctc	ctcactctgc	ccaccagaca	aaaacacaac	ggcagggaca	480
gccg						484

<210> 217

<211> 362

<212> DNA

<213> Eucalyptus grandis

<400> 217

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agcatcaccc	ttgtatgttc	caagagttgc	gtccgagttg	gccttgcac	ttctgagaag	120
tgcagcctgt	gccttgggaa	tggtctcttc	ctttccagcc	cacgccttca	aggtgtctctg	180
ctgtagggcc	cgaccaaaaag	agaaggagag	gctccatggc	ttcttgccct	tgagcttggt	240
catggcattg	aggttcaaag	tggcctcctc	ctcactctgc	ccaccggaca	agaagacaat	300
ggccggaaca	gcaggaggca	ctgttcgctg	cagggcacga	acggtgtact	cagcaatgac	360
ct						362

<210> 218

<211> 395

<212> DNA

<213> Eucalyptus grandis

<400> 218

ccttaacatg	gagagactcg	gaagcaccct	cgccaagttg	agcatcaccc	ttgtatgttc	60
caagagttgc	gtccgagttg	gccttgcac	ttctgagaag	tgcagcctgt	gccttgggaa	120
tggtctcttc	ctttccagcc	cacgccttca	aggtgtctctg	ctgtagggcc	cgaccaaaaag	180
agaaggagag	gctccatggc	ttcttgccct	tgagcttggt	catggcattg	aggttcaaag	240
tggcctcctc	ctcactctgc	ccaccggaca	agaagacaat	ggccggaaca	gcaggaggca	300
ctgttcgctg	cagggcacga	acggtgtact	cagcaatgac	ctccggagca	accttggggg	360
cattgatccg	ggggtgacca	tgttgggctt	caaca			395

<210> 219

<211> 416

<212> DNA

<213> Eucalyptus grandis

<400> 219

cgtccctcag	tacttgtagt	ccttaacatg	gagagactcg	gaagcaccct	cgccaagttg	60
agcatcaccc	ttgtatgttc	caagagttgc	gtccgagttg	gccttgcac	ttctgagaag	120
tgcagcctgt	gccttgggaa	tggtctcttc	ctttccagcc	cacgccttca	aggtgtctctg	180
ctgtagggcc	cgaccaaaaag	agaaggagag	gctccatggc	ttcttgccct	tgagcttggt	240
catggcattg	aggttcaaag	tggcctcctc	ctcactctgc	ccaccggaca	agaagacaat	300
ggccggaaca	gcaggaggca	ctgttcgctg	cagggcacga	acggtgtact	cagcaatgac	360
ctccggagca	accttggggg	catctgatcc	gggggtgacc	atgttgggct	tcaaca	416

<210> 220

<211> 452
 <212> DNA
 <213> Eucalyptus grandis

<400> 220
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 tccgcccctc agtacttgta gtccttaaca tggagagact cggaagcacc ctgcgcaagt 120
 tgagcatcac ccttgatgtg tccaagagtt gcgtccgagt tggccttgca tcttctgaga 180
 agtgcagcct gtgccttggg aatgttctct tcctttccag cccacgcctt caaggtgctc 240
 tgctgtaggg cccgaccaa agagaaggag aggctccatg gcttcttgcc cttgagcttg 300
 ttcattggcat tgaggttcaa agtggcctcc tcctcactct gccaccgga caagaagaca 360
 atggccggaa cagcaggagg cactgttcgc tgcagggcac gaacggtgta ctcagcaatg 420
 acctccggag caaccttggg ggcatctgat cc 452

<210> 221
 <211> 289
 <212> DNA
 <213> Eucalyptus grandis

<400> 221
 ctgagtactn gtagtcctta acatggagag actcggaagc accctcgcca agttgagcat 60
 cacccttgna tgttccaaga gttgcgtccg agttggcctt gcatcttctg agaagtgcag 120
 cctgtgcctt gggaatgttc tcttcctttc cagcccacgc cttcaagggtg ctctgctgta 180
 gggcccgacc aaaagagaag gagaggctcc atggcttctt gcccttgagc ttgttcatgg 240
 cattgagggtt caaagnggcc tcctcctcac tctgcccacc ggacaagaa 289

<210> 222
 <211> 460
 <212> DNA
 <213> Eucalyptus grandis

<400> 222
 ggatcgccgg gcagcagtc ttcgccccgc gcccccggtc gtccgcccgc cgcttccccg 60
 cccgcccgt ctccgccccg atccgcccgc cgccttactc cgacgagctc gtccagaccg 120
 ccaaattccat tgcattctct ggtcgtggta tccttgccat tgatgagtc aatgcaacat 180
 gtgggaaaag gttagcatcc atcgggttgg acaacactga ggtcaatcgt caagcttata 240
 gacaacttct gttgaccacg cctgggtctg gtgaatacat ctctgggtgc attttgtttg 300
 aggagacact ttaccaatcg acaacagatg ggaagaaatt tgttgactgc ctgcgtgagg 360
 agaaaattgt tccaggcatt aaagttgaca agggtttggg tcctcttctt ggatccaata 420
 atgaatcctg gtgccaaggc ttggatggat tggcttcaag 460

<210> 223
 <211> 373
 <212> DNA
 <213> Eucalyptus grandis

<400> 223
 cgtccctcag tacttgtagt ccttaacatg gagagactcg gaagcaccct cgccaagttg 60
 agcatcacc ttgtatgttc caagagttgc gtccgagttg gccttgcatc ttctgagaag 120
 tgcagcctgt gccttgggaa tgttctcttc ctttccagcc cagccttca aggtgctctg 180
 ctgtagggcc cgacccaaa agaggagag gctccatggc ttcttgccct tgagcttgtt 240
 catggcattg aggttcaaag tggcctctc ctcactctgc ccaccggaca agaagacaat 300
 ggccggaaca gcaggaggca ctgttcgctg cagggcacga acggtgtact cagcaatgac 360
 ctccggacaa cct 373

<210> 224
 <211> 524

<212> DNA

<213> Eucalyptus grandis

<400> 224

ggatcgccgg	gcagcagtc	ttcgccccgc	gcccccggtc	gtccgcccgc	cgcttccccg	60
cccgccggt	ctccgccccg	atccgcgcgc	ccgcttactc	cgacgagtc	gtccagaccg	120
ccaaatccat	tgcattctct	ggtcgtggta	tccttgccat	tgatgagtca	aatgcaacat	180
gtgggaaaag	gtagcatcc	atcgggttgg	acaacactga	ggtcaatcgt	caagcttata	240
gacaacttct	gttgaccacg	cctggctctg	gtgaatacat	ctctgggtgc	atcttggttg	300
aggagacact	ttaccaatcg	acaacagatg	ggaagaaatt	tggtgactgc	ctgcgtgagg	360
agaaaattgt	tccaggcatt	aaagttgaca	agggtttggt	tcctcttctc	ggatccaata	420
atgaatcctg	gtgcccaagg	ttggatggat	tggcttcaag	gtccgctgaa	tactacaagc	480
aaggtgctcg	ttttgccaaa	tggaggacag	tggttagcat	tcct		524

<210> 225

<211> 332

<212> DNA

<213> Eucalyptus grandis

<400> 225

acggtcagta	atccacgaaa	caaacgaagc	acaagtaata	gtatcgcagc	aaagcctaga	60
tccgcccctc	agtacttgta	gtccttaaca	tggagagact	cggaagcacc	ctcgccaagt	120
tgagcatcac	ccttgtagt	tccaagagtt	gcgtccgagt	tggccttgca	tcttctgaga	180
agtgcagcct	gtgccttggg	aatgttctct	tcctttccag	cccacgcctt	caaggtgctc	240
tgtcttaggg	cccgacccaa	agagaaggag	aggctccatg	gcttcttgcc	cttgagcttg	300
ttcatggcat	tgaggttcaa	agtggcctcc	tc			332

<210> 226

<211> 362

<212> DNA

<213> Eucalyptus grandis

<400> 226

cgccctcag	tacttgtagt	ccttaacatg	gagagactcg	gaagcaccct	cgccaagttg	60
agcatcacc	ttgtatgttc	caagagttgc	gtccgagttg	gccttgcatc	ttctgagaag	120
tgcagcctgt	gccttgggaa	tgttctcttc	ctttccagcc	cacgccttca	aggtgctctg	180
ctgtagggcc	cgacccaaaag	agaaggagag	gctccatggc	ttcttgccct	tgagcttggt	240
catggcattg	aggttcaaag	tggcctcttc	ctcactctgc	ccaccggaca	agaagacaat	300
ggccggaaca	gcaggaggca	ctgttcgctg	cagggcacga	acggtgtact	cagcaatgac	360
ct						362

<210> 227

<211> 506

<212> DNA

<213> Eucalyptus grandis

<400> 227

gtcactccc	gcgctgagt	caaagagagg	gccactcccc	agcaagtgc	cgagtacacc	60
ctcaagctcc	tccaccgcag	gatcccgcct	gccgttcccc	gaatcatgtt	cttgtctggt	120
gggcaatcc	aggtcgaagc	aaccctgaac	ctgaacgcga	tgaaccagtc	cccgaaccca	180
tggcacgtgt	ccttctccta	cgctagagcc	ctccagaaca	cctgcttgaa	gacgtgggga	240
ggcaggcccc	agaacgtgaa	ggccgctcag	gatacgctcc	tggccgctgc	caaggccaac	300
tccttcgccc	agctcgga	gtacaccgg	gaaggcgagt	ctgaggaggc	caagaaggga	360
atgttcgtca	aggataacgt	gtactaaggg	gatgcactga	aactccatga	gctcagaaga	420
tgatcacagg	tttagttatg	ataatgatgg	tggcggatgg	agcattggaa	gctatgaaga	480
agtagaacag	ctaattcctc	cttctc				506

<210> 228
 <211> 283
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 228
 ttgacaaggg tttggttcct cttcctggat ccaataacga atcctggtgc caaggcttgg 60
 atggattggc ttcaaggtcc gctgaatact acaagcaagg tgctcgtttt gccaaatgga 120
 ggacagtggg tagcattcct tgtggtccct ctgctcttgc agtaaaagaa gctgctggg 180
 gacttgacag atatgctgcc atctctcagg ataatggcct tgtgcccatt gttgaacctg 240
 agattcttct tgatggagac caccctattg agaggactct tga 283

<210> 229
 <211> 450
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 229
 gtcactcccc gcgctgagtg caaagagagg gccactcccc agcaagtcgc cgagtacacc 60
 ctcaagctcc tccaccgcag gatcccgctt gccgttcccc gaatcatgtt cttgtctggg 120
 gggcaatccg aggtcgaagc aaccctgaac ctgaacgcga tgaaccagtc cccgaaccca 180
 tggcacgtgt ctttctccta cgctagagcc ctccagaaca cctgcttgaa gacgtgggga 240
 ggcaggcccc agaacgtgaa ggccgctcag gatacgtctc tgggtccgtgc caaggccaac 300
 tccctcgccc agctcggcaa gtacaccggt gaaggcgagt ctgaggaggc caagaaggga 360
 atgttcgtca agggatacgt gtactaaggc gatgcactga aactccatga gctcagaaga 420
 tgatcacagg gtttagttat gataatgatg 450

<210> 230
 <211> 417
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 230
 gtcactcccc gcgctgagtg caaagagagg gccactcccc agcaagtcgc cgagtacacc 60
 ctcaagctcc tccaccgcag gatcccgctt gccgttcccc gaatcatgtt cttgtctggg 120
 gggcaatccg aggtcgaagc aaccctgaac ctgaacgcga tgaaccagtc cccgaaccca 180
 tggcacgtgt ctttctccta cgctagagcc ctccagaaca cctgcttgaa gacgtgggga 240
 ggcaggcccc agaacgtgaa ggccgctcag gatacgtctc tgggtccgtgc caaggccaac 300
 tccctcgccc agctcggcaa gtacaccggt gaaggcgagt ctgaggaggc caagaaggga 360
 atgttcgtca agggatacgt gtactaaggc gatgcactga aactccatga gctcaga 417

<210> 231
 <211> 663
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 231
 aaatggcctg cgccagcttc gccaaagctca acgccacctc ctcccagtggt atcgccggggc 60
 agcagtcctt cgccccgcgc ccccggtcgt ccgccgcccc cttccccgcc cgccgcgtct 120
 ccgccccgat ccgcgcgcgc gcttactcgc acgagctcgt ccagaccgcc aaatccattg 180
 catctcctgg tcgtggtatc cttgccattg atgagtcaaa tgcaacatgt gggaaaagg 240
 tagcatccat cgggttggac aatactgagg tcaatcgtca agcttataga caacttctgt 300
 tgaccacgcc ttggtctggg gaatacatct ctggtgccat tttgtttgag gagacacttt 360
 accaatcgac aacagatggg aagaaatttg ttgactgcct gcgtgaggag aaaattgttc 420
 caggcattaa agttgacaag ggtttgggtc ctcttcctgg atccaataac gaatcctggt 480
 gccaaaggctt ggatggattg gcttcaaggc ccgctgaata ctacaagcaa ggtgctcgtt 540
 ttgccaaatg gaggacagtg gtttagcattc cttgtggtcc ctctgctctt gcagtaaaag 600

aagctgcgtg gggacttgca cgatatgctg gcattctctca ggataatggc cttgtgcccc 660
 ttg 663

<210> 232
 <211> 435
 <212> DNA
 <213> Eucalyptus grandis

<400> 232
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 gcagaaaata ccgccagcaa aagcacctta gtacttgtaa tccttaacat ggagactttc 120
 aacagctccc tcgccaagct ttgcgtcacc cttgtaagta ccaagagttg cctctgagtt 180
 tgccttgca ctagtaaaata atgcagcctg tgccttgggc acgttctcct cctttccagc 240
 ccaagacttc aaagtgtctt gctgaagagc ccgtccaaaag gagaaggaaa gagaccatgg 300
 tttcttgccc ttgagcttgt tcatggcatt gaggttgagg gttgcctcct tctcactctg 360
 cccaccagac aaaaacacaa cggcagggac agccggaggc atagtacgtt gaaaggcacg 420
 aacagtgtac tcagc 435

<210> 233
 <211> 352
 <212> DNA
 <213> Eucalyptus grandis

<400> 233
 acttgtagtc cttaacatgg agagactcgg aagcacccct gccaaagtga gcaccaccct 60
 tgtatgttcc aagagttgct tccgagttgg ccttgcatct tctgagaagt gcagcctgtg 120
 ccttggaagt gttctcttcc tttccagccc acgccttcaa ggtgctctgc ttagggccc 180
 gacccaaaaga gaaggagagg ctccatggct tcttgccctt gagcttggtc atggcattga 240
 gggtcaaagt ggctcctcc tcactctgcc caccggacaa gaagacaatg gccggaacag 300
 caggaggcac tgttcgctgc agggcacgaa cgggtgtact agcaatgacc tc 352

<210> 234
 <211> 330
 <212> DNA
 <213> Pinus radiata

<400> 234
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 atgggccttc ggagtttagct gtgaagggaag ctgcgtgggg acttgacagt tatgccgcta 120
 tctctcagga caatggtctt gtgcccattg tggagccaga gattcttctg gatggagacc 180
 attgcattga cagaagcctt gaagtggcgg agaaagtctg ggctgaggtt ttcttttact 240
 tggcacagaa caatgtgttg tttgagggta ttttggttaa gccaaagtat gtgactcctg 300
 gtgctgagca caaggagaga gcaacccccg 330

<210> 235
 <211> 301
 <212> DNA
 <213> Pinus radiata

<400> 235
 actgnagcac aaggagagag caacccccga aaagggtgca gactacactc taaaaatgct 60
 taagaggagg gtgccaccag ctgttcctgg gggttatgttc ttgtctggag gacagtctga 120
 gggttaggca acattgaatt tgaatgcaat gaaccaaagc ccaaaccat ggcatgtttc 180
 cttttcatat gcacgtgcct tgcagaatac atctctcaag acctgaaagg gtcttccaga 240
 gactgttgaa gcagctcaga gggcgcttct tattcgggcc aaggataatt ctctggccca 300
 g 301

<210> 236
 <211> 368
 <212> DNA
 <213> Pinus radiata

<400> 236
 acaaacaggg tgcaagtttt gctaaatggc gaacagttgt cagcattacc catgggcctt 60
 cggagttagc tgtgaaggaa gctgcgtggg gacttgcacg ttatgccgct atctctcagg 120
 acaatgggtct tgtgcccatt gtggagcnag agattcttct ggatggagac cattgcattg 180
 acagaagcct tgaagtggcg gagaaagtct gggctgaggt tttcttttac ttggcacaga 240
 acaatgtgtt gtttgagggg attttggtta agccaagtat ggtgactcct ggtgctgagc 300
 acaaggagag agcaaccccc gaaaagggtg cagagtacac tctaaaaatg cttaagagga 360
 ggggtgcca 368

<210> 237
 <211> 423
 <212> DNA
 <213> Pinus radiata

<400> 237
 gacttgaaga acacggaggc gaaccgacag ggcatacagg cagctgctcg ttcagcgcgc 60
 cgggtctcgg acagtacatc tccggcgcca ttctcttcga ggaaactctg taccagtcca 120
 gcaccgaagc aagaagattg tagacatcct cgtgcaacag aacatagtcc ccggcatcaa 180
 agttgacaag ggtctgggtc ctttggtctg ttcaaacgac gaatcttggg gccaaaggcct 240
 agacggcctc gcatcaagggt gcgctgagta ttataagcaa ggagctcgtc tcgccaaatg 300
 gcgtacagtt gtgagcattc ccaacggccc ctctgctctg gccgtgaaag aagccgcatg 360
 ggggtctcggc cgcaacgggc aattgctcag gacaacgggtc tggttccata gtggagcaga 420
 gat 423

<210> 238
 <211> 352
 <212> DNA
 <213> Pinus radiata

<400> 238
 cttgcattga cagaagcctt gaagtggcgg anaaagtctg ggctgaggtt ttcttttact 60
 ttggcacagaa caatgtgttg tttgagggta ttttggttaa gccagtatg gtgactcctg 120
 gtgctgagca caaggagaga gcaaccctcg aaaagggttg agagtacact ctaaaaatgc 180
 ttaagaggag ggtgccacca gctgttcctg gggttatgtt cttgtctgga ggacagtctg 240
 aggttgaggc aactttgaat ttgaatgcaa tgaaccaaag cccaaatcca tggcatgttt 300
 ctttttcata tgcacgtgcc ttgcagaata catcncatcaa gacctggaag gg 352

<210> 239
 <211> 427
 <212> DNA
 <213> Pinus radiata

<400> 239
 cagcgtccgg gccggggcctt acagcgaaga gctgatcaag acggcgaaaa cagtggcgtc 60
 tcccgggaga ggcacatcctg cgatggacga gtccaacgcc acctgtggga aacggctggc 120
 gtccatcggg cttgagaaca cggaggcgaa ccgacaggca tacaggcagc tgctcgtcag 180
 cgcgccgggt ctcgacaggt acatctccgg cgccattctc ttcgaggaaa ctctgtacca 240
 gtccagcacc gaaggcaaga agattgtaga catcctcgtg caacagaaca tagtccccgg 300
 catcaaagtt gacaagggtc tggttccttt ggctgggttca aacgacgaat cttggtgcca 360
 aggccagac gccctcgcac caagggtgcg tgagtattat aagcaaggag ctgcgttcgc 420
 caaatgg 427

<210> 240
 <211> 470
 <212> DNA
 <213> Pinus radiata

<400> 240
 gcacaaggag agagcaaccc ccgaaaaggt tgcagagtac actctaaaaa tgcttaagag 60
 gaggggtgcca ccagctgttc ctgggggttat gttcttgtct ggaggacagt ctgaggttga 120
 ggcaacattg aatttgaatg caatgaacca aagcccaaac ccatggcatg tttccttttc 180
 atatgcacgt gccttgacaga atacatctct caagacctgg aagggtcttc cagagaatgt 240
 tgaagcagct cagagggcgc ttcttattcg ggccaaggct aattctctgg ccagcttgg 300
 gcgatactct gctgaagggt aaagtgaaga gtctaagaag ggaatgttcg ttaagggata 360
 cacatattaa gaatgtgggt catagttttc ttacgggaag aactcgttca atgcggatag 420
 gttaagcttt tatgtttatt tanttggcac ttacaatcct gaacttttta 470

<210> 241
 <211> 396
 <212> DNA
 <213> Pinus radiata

<400> 241
 gattgctggg tccatccttt ttgcaacaga ccctatacca gtaccacaac cgacgggagg 60
 aaatttgttg actgtttgcg agagcagaat attatgcccg gcatcaaagt tgacaagggg 120
 ttagttccac tgccaggatc aaacaatgaa tcttggtgcc aggggttggg tggattagcc 180
 tcaagatctg ctgagtacta caaacagggt gcaagatttg ctaaattggcg aacagttgtc 240
 agcataccca atgggccttc ggagttagct gtgaaggaag ctgcgtgggg acttgacagt 300
 tatgccgcta tctctcagga caatggtctt gtgcccattg tggagccaga gattcttctg 360
 gatggagacc attgcattga cagaagcttg aagtgg 396

<210> 242
 <211> 273
 <212> DNA
 <213> Pinus radiata

<400> 242
 aacaatgtgt tgtttgangg tattttgtta aagccaagta tgggtgactcc tgggtgtgag 60
 cacaaggaga gagcaacccc cgaaaaggtt gcagagtaca ctctaaaaat gcttaagagg 120
 aggggtgccac cagctgttcc tgggggttatg ttcttgtctg gaggacagtc tgaggttgag 180
 gcaacattga atttgaatgn aatgaaccaa agcccaaacc catggcatgt ttccttttca 240
 tatgcacgtg ccttgacaga tacatctctc aag 273

<210> 243
 <211> 557
 <212> DNA
 <213> Pinus radiata

<400> 243
 ggaagctgcy tggggacttg cacgttatgc tgctatctct caggacaatg gtcttgtgcc 60
 cattgtggag ccagagattc ttctggatgg agaccattgc attgacagaa gccttgaagt 120
 ggcggagaaa gtctgggctg aggttttctt ttacttggca cagaacaatg tgttgtttga 180
 ggggtattttg ttaaagccca gtatggtgac tcctgggtgct gagcacaagg agagagcaac 240
 ccctgaaaag gttgcagagt acactctaaa aatgcttaag aggaggggtg caccagctgt 300
 tcctgggggtt atgttcttgt ctggaggaca gtctgaggtt gaggcaactt tgaatttgaa 360
 tgcaatgaac caaagcccaa atccatggca tgtttctttt tcatatgcac gtgccttgca 420
 gaatacatct ctcaagacct ggaaggggtc tccagagaat gttgaagcag ctgagagggc 480
 gcttcttatt cgggccaagg ctaattctct ggcccagctt gggcgatact ctgctgaagg 540
 tgaaagttag gactcta 557

<210> 244
 <211> 593
 <212> DNA
 <213> Pinus radiata

<400> 244
 acgaggggtct cggacagtac atctccggcg ccattctctt cgaggaaact ctgtaccagt 60
 ccagcaccga aggcaagaag attgtagaca tcctcgtgca acagaacata gtccccggta 120
 tcaaagttga caaggggtctg gttccttttg ctgggttcaaa cgacgaatct tgggtgccaag 180
 gcctagacgg cctcgcacatca aggtgcgctg agtattataa gcaaggagct cgcttcgcca 240
 aatggcgctac agttgtgagc attcccaacg gccctctgc tctggccgtg aaagaagccg 300
 catgggggtct cgcccgtac gcggcaattg ctcaggacaa cggctctggtt cccatagtgg 360
 agccagagat catgttggat ggagaacacg gcattgagag gactttcgaa gtagcgctga 420
 aggtgtggtc cgaggtgttc ttctacctag cagagaacaa cgtgctgttc gaaggcattc 480
 tgctgaagcc aagcatggtt acccctggtg cccgaatgta aggagagggc cagtcccga 540
 actgttgccc aatataccct gaaccttctc cgaagaagaa ttccaccggc cgt 593

<210> 245
 <211> 485
 <212> DNA
 <213> Pinus radiata

<400> 245
 acgaggggtct cggacagtac atctccggcg ccattctctt cgaggaaact ctgtaccagt 60
 ccagcaccga aggcaagaag attgtagaca tcctcgtgca acagaacata gtccccggta 120
 tcaaagttga caaggggtctg gttccttttg ctgggttcaaa cgacgaatct tgggtgccaag 180
 gcctagacgg cctcgcacatca aggtgcgctg agtattataa gcaaggagct cgcttcgcca 240
 aatggcgctac agttgtgagc attcccaacg gccctctgc tctggccgtg aaagaagccg 300
 catgggggtct cgcccgtac gcggcaattg ctcaggacaa cggctctggtt cccatagtgg 360
 agccagagat catgttggat ggagaacacg gcattgagag gactttcgaa gtagcgctga 420
 aggtgtggtc cgaggtgttc ttctacctag cagagaacaa cgtgctgttc gaaggcattc 480
 tgctg 485

<210> 246
 <211> 477
 <212> DNA
 <213> Pinus radiata

<400> 246
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 agtactacaa acaggggtgca agatttgcta aatggcgcaac agttgtcagc ataccgaatg 120
 ggccttcgga gtttagctgtc aaggaagctg cgtggggact tgcacgttat gctgctatct 180
 ctcaggacaa tgggtcttggtg cccattgtgg agccagagat tcttctggat ggagaccatt 240
 gcattgacag aagccttgaa gtggcggaga aagtctgggc tgaggttttc ttttacttgg 300
 cacagaacaa tgtgttgttt gagggatatt tggttaaagcc cagtatggtg actcctgggtg 360
 ctgagcaciaa ggagagagca acccctgaaa aggttgcaga gtacactcta aaaatgctta 420
 agaggaggggt gccaccagct gtccctgggggt tatgttcttg tctggaggac agtctga 477

<210> 247
 <211> 337
 <212> DNA
 <213> Pinus radiata

<400> 247
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 cgaatcttgg tgccaaggcc tagacggcct cgcacaaagg tgcgctgagt attataagca 120

aggagctcgc	ttcgccaaat	ggcgtacagt	tgtgagcatt	cccaacggcc	cctctgctct	180
ggccgtgaaa	gaagccgcat	ggggtctcgc	ccgctacgcg	gcaattgctc	aggacaacgg	240
tctggttccc	atagtggagc	cagagatcat	gttgatgga	gaacacggca	ttgagaggac	300
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<210> 248

<211> 452

<212> DNA

<213> Pinus radiata

<400> 248

gttttctttt	acttggcaca	gaacaatgtg	ttgtttgagg	gtattttgtt	aaagccaagt	60
atggtgactc	ctggtgctga	gcacaaggag	agagcaaccc	ccgaaaagg	tgcagagtac	120
actctaaaaa	tgcttaagag	gagggtgcc	ccagctgttc	ctggggttat	gttcttgtct	180
ggaggacagt	ctgaggttga	ggcaacattg	atttgaatgc	aatgaaccaa	agcccaaacc	240
catggcatgt	ttccttttca	tatgcacgtg	ccttgcagaa	tacatctctc	aagacctgga	300
agggctcttc	agagaatgtt	gaagcagctc	agagggcgct	tcttattcgg	gccaaggcta	360
attctctggc	ccagcttggg	cgatactctg	cttgaagggt	aaagtgagga	gtctaagaag	420
ggaatgttcg	ttaagggata	cacatattaa	ga			452

<210> 249

<211> 358

<212> DNA

<213> Pinus radiata

<400> 249

cagaatacac	agtaagggct	cttcagagga	ctgtgccacc	tgcagtggcc	ggcataatgt	60
ttctatctgg	tgggcagagt	gaggaggagg	ccaccttgaa	cttgaatgcc	atgaacaagc	120
tgcagaccaa	gaagccctgg	acattgncat	tctcctttgg	ccgggctctt	caggccagca	180
ctttgaagac	atgggctgga	aaggatgaga	atattcctgc	ggctcaggct	gccttgttat	240
ctcgaatgcaa	ggccaattct	gatgccactt	tgggcaagta	tgcaggtgat	tctgctaagg	300
gcaatgggtgt	ttctgagagc	cttcatgtca	aggactataa	gtattgattg	atgaccac	358

<210> 250

<211> 341

<212> DNA

<213> Pinus radiata

<400> 250

aaaactatga	cccacattct	taatattgtg	atcccttaac	gaacattccc	ttcttagact	60
cctcactttc	accttcagca	gagtatcgcc	caagctgggc	cagagaatta	gccttggccc	120
gaataagaag	cgccctctga	gctgcttcaa	cattctctgg	aagacccttc	caggtcttga	180
gagatgtatt	ctgcaaggca	cgtgcatatg	aaaaggaaac	atgccatggg	tttgggcttt	240
ggttcattgc	attcaaattc	aatgttgcct	caacctcaga	ctgtcctcca	gacaagaaca	300
taaccccagg	aacagctggg	ggcaccctcc	tcttaagcat	t		341

<210> 251

<211> 408

<212> DNA

<213> Pinus radiata

<400> 251

gaaattccag	agaaagacct	tgtgatctat	gaaatgagtg	ttcgatcctt	cacagcagac	60
aaatcaagtg	ggttggaacc	cagtatacgt	ggaagctatc	ttggtgttat	tgaaaagatt	120
cctcatcttc	tagaacttgg	cattaatgca	gtggaattat	taccagtgtt	tgagtttgac	180
gagtttgaat	ttcaaaggca	tccaaatcct	cgtgaccata	tgtaaagtgt	atggggctat	240
tctacaatga	acttcttttc	tccaatgagc	cggtatgctt	ccactggtgg	ggggccatta	300

gcagcttcat	tagaatttaa	gaaaatggtc	aaggccttgc	atagtgcagg	aattgaggtt	360
atthttggatg	tggtttacaa	ccatacaaat	gaagcggatg	atgagcat		408

<210> 252

<211> 537

<212> DNA

<213> Eucalyptus grandis

<400> 252

ggcgaacacc	agcacagtgt	tatgctgact	tcatgcgtgc	atthagagac	aacttccagc	60
accttttagg	tgaaaccatt	gtggaaattc	aagtaggcat	ggggccagca	ggcgaacttc	120
gttatccatc	ataccagag	caaaatggga	catggaaatt	tccaggaatt	ggagcttttc	180
aatgttacga	caagtacatg	ctgagtagct	tgaaagctgc	agccgaggct	gctggcгаааg	240
cagaatgggg	ccacaccggt	ccaactgatg	ctggctacta	taacaactgg	ccggaggatg	300
ccccattctt	caaaaaggaa	ggtggaggat	ggaacagtca	atatggtgaa	ttcttcttgt	360
cgtgggtattc	tcagatgcta	ctggaçcatg	gtgagagaat	actctcatct	gccaaatcag	420
tcctttgagaa	tacaggaaca	aagattttcag	tcaagggttgc	aggaatttca	ctggcactat	480
ggaacgccgt	tcgcatgctc	ctgagctgac	agcaggatac	tacaacacac	gttatcg	537

<210> 253

<211> 466

<212> DNA

<213> Eucalyptus grandis

<400> 253

gtagcttgaa	agctgcagcc	gaggctgctg	gcaaagcaga	atggggccac	accggtccaa	60
ctgatgctgg	tcactataac	aactggccag	aggatgcccc	attcttcaaa	aaggaagggtg	120
gaggatggaa	cagtcaatat	ggtgaattct	tcttgctcgtg	gtattctcag	atgctactgg	180
accatggtga	gagaatactc	tcactctgcca	aatcagtcctt	tgagaataca	ggaacaaaga	240
tttcagtcaa	ggttgcagga	attcaetggc	actatggaac	gcgttcgcat	gctcctgagc	300
tgacagcagg	atactacaac	acacgttatc	gggatgggta	ccttcccatt	gcccagatgt	360
tggcacggca	cggtgctata	ttcaacttca	cctgcatcga	aatgcgtgac	cacgagcaac	420
cccaagatgc	gctctgcgca	cctgagaagc	tggtgaagca	agtagc		466

<210> 254

<211> 364

<212> DNA

<213> Eucalyptus grandis

<400> 254

agatggcgaa	gaagcatggg	ttgaaagtgc	aggctgtgat	gtcgtttcac	cagtgcgggtg	60
gaaacgttg	tgactcttgc	tccatccctc	taccaaagtg	ggctgtggaa	gaagttgata	120
aagatccaga	tcttgcatat	acagaccagt	ggggtaggag	aaactacgag	tacatatcgc	180
ttggctgtga	caccctcccg	gttctcaaaag	ggcgaacacc	tgtacagtgt	tatgctgact	240
tcatgcgtgc	atthagagac	aacttccagc	accttttagg	tgaaaccatt	gtggaaattc	300
aagtaggcat	ggggccagca	ggcgaacttc	gttatccatc	ataccccgag	caaaatggga	360
catg						364

<210> 255

<211> 379

<212> DNA

<213> Eucalyptus grandis

<400> 255

ccagcatata	cagaccagtg	gggtaggaga	aactacgagt	acatatcgct	tggtggggac	60
accctcccg	ttctcaaagg	gcgaacacct	gtacagtgtt	atgctgactt	catgcgtgca	120
tttagagaca	acttccagca	ccttttaggt	gaaaccattg	tggaatttca	agtaggcatg	180

gggccagcag	gcgaacttcg	ttatccatca	taccccgagc	aaaatgggac	atggaaattt	240
ccaggaattg	gagcttttca	atgttacgac	aagtacatgc	tgagtagctt	gaaagctgca	300
tccgaggctg	ctggcaaagc	agaatggggc	cacaccggtc	caactgatgc	tggtcactat	360
aacaactggc	cagaggatg					379

<210> 256

<211> 370

<212> DNA

<213> Eucalyptus grandis

<400> 256

gaagcttttcg	tgcagagttc	aatgactact	ttgaggatgg	tataatatca	atgattggga	60
ttggattggg	tccttgtggg	gagttacggg	acccatcaaa	ccctgtaaaa	aatgggttgg	120
gatattcctg	gataggtgaa	tttcagtgtc	acgatcagta	tctactgaag	aatctcagaa	180
aggcagcaga	ggcaaggggt	caggcttttt	gggctagagg	tccagataat	gcagggttctt	240
ataattcaca	gccacaagaa	actgggtttct	tctgtgatgg	aggagattac	gatgggtatt	300
ttggaagggt	cttccttaag	tggtactctc	agggtgttgat	tgatcatggt	gatagagtac	360
ttgccttggc						370

<210> 257

<211> 287

<212> DNA

<213> Pinus radiata

<400> 257

ggaaatctta	acaaggacat	ctactacaga	gatcggcatg	gatattctag	tgatgagtat	60
ctatctgctg	gagtggatca	aatacctata	ttatatggac	gtacagctgt	tgaatgctat	120
gaagatttca	tggtcagctt	catagacaaa	tttcaatcac	tcattgggaaa	tccaattcaa	180
gaaattacta	ttggccttgg	tccgtcaggt	gaactaaggt	accctgcccc	tcctttttct	240
gatgggagat	ggaagttccc	tggtattgga	gaattccagt	gctatga		287

<210> 258

<211> 396

<212> DNA

<213> Pinus radiata

<400> 258

gcggtatcca	tcttatcctg	agagtaacgg	tacatggaaa	ttcccaggga	ttggagcatt	60
tcagtgtctat	gataagggtat	ggatactagc	catttttttt	tatgaatttc	cctccagctg	120
tatttttagtc	atatagtttg	ccttttttatt	tactagtttg	gatttccttg	tattgcagta	180
tatgatctct	aaccttagat	ccacgtccga	agctgctgga	aagcaggagt	ggggtaattgg	240
gggtccaagt	gatgcaggtc	attacaataa	ctggcctgag	gacagcccgt	ttttccgcag	300
agatgggtgg	tggaacagtt	cttatgggtga	gttttttctt	gagtgggtatt	ctcgtatgct	360
tcttgatcat	ggagagagaa	tcctaggagc	agctga			396

<210> 259

<211> 420

<212> DNA

<213> Pinus radiata

<400> 259

gagggtctca	tgcagcagaa	cttactgctg	ggtactataa	cacttcctat	agagatgggt	60
atgattcaat	cgctgcagtc	tttgcaagac	atggcgcgagc	tttaaattatt	ccttgtatgg	120
agatgttttg	tagtgaacag	ccagagatat	gctgctgcag	tccggagggt	ctcattaggc	180
agatgagaga	agttgcaagg	cgaggaaata	tacctttaac	agggtgaaaat	gcaattgaac	240
gctttgataa	ggaggctttc	tctcaaattg	tgagaaatgc	ttacaatcgt	cctcaggatg	300
tgagagcctt	tacgtatttc	cgaatgaggg	aggcactggt	caggactgat	aattggaaaat	360

cattcgtgaa ctttggttaag cagatgtaca ataagtctca agatggaggc tgcaatggta 420

<210> 260

<211> 378

<212> DNA

<213> Pinus radiata

<400> 260

gttctgaaat ccaggatgcc aatgcaaagg aacttcccct tttatgtaat tcttcctccg	60
gatacaatat ccgcttctaa cactttaaac cattgcaagg caattcaagc aggccttactt	120
gccttaaagg ctcttggtgt ggatggagtg gttatgcaag tattttgggg cattgtggag	180
agagatgtc caacaaaata tgactgggtc gcataatttg ctttggtgaa aatgggtccaa	240
gcagcaggcc tgaaagttca ggcttcaata tgctttaatg gttgtaaatc tagtcaagaa	300
agcttggtcta tacctcttcc atcttgggtt cttacagtgg gcaatagtga tccagacatc	360
ttcttcacag accgatcg	378

<210> 261

<211> 303

<212> DNA

<213> Pinus radiata

<400> 261

gtgataatga tctggcctac acggatcagt ggggcaggcg aaactatgag tatatttcgt	60
tgggatgtga taatctccca gttttgaagg gaagaacgcc tgttcaatgc tatgctgatt	120
acatgaggag tttcaaggag aattttgggg atcttctggg agaaaccatt gtggaaattc	180
aagtgggaat gggctctgca ggagagctga ggtatccatc ttatcctgag agtaatggta	240
cctggagatt cccaggaatt ggagcatttc agtgcctatga taagtatatg gtctctaacc	300
tta	303

<210> 262

<211> 385

<212> DNA

<213> Pinus radiata

<400> 262

cgaaagagat ggatacagac ccatagccag aatgctggca agacatcggg cggatttgaa	60
ttttacatgc attgaaatgc aggataatga acaaccgtcc gaagccagtt gtgggcccga	120
ggctcttggt cgtcagggtat taaatgctgg atggaaagaa ggtattgagg ttctctgtga	180
aaatgcttta cctagatttg atgaagaagc atatgatcag attgtaaggc aatccagacc	240
cgaggggaata aacgaaacag gaccgcccga gaagcgaata tctgctttta cctatctaag	300
gctatctcaa gaactcatgc aagaacatag ctggaaagaa ttcaacaaat tcttgagaag	360
aatgcatgtg agtttggtt atcat	385

<210> 263

<211> 330

<212> DNA

<213> Pinus radiata

<400> 263

ggcaagatca cctccgctca gtactatgtc aacaacaagg gtgttcccgc cgagaagggc	60
tgccagtggg gtgacgggtc cgagcccacg ggtaactggg ccccatgaa cctgggtgtt	120
ggctactctg ccggctccac ctgggtgtcc atgttcaaga acgagcctac cacctctgcc	180
aacctggact tcaagatcaa gattatcggt gacgacctga gcgacaactg cagctacgac	240
ggagccggca acttctacaa caaggccggc ctgatcacct ctggcaacgg ctgcactgtc	300
agctcctcct ctggcaacgc ctacttcgtc	330

<210> 264

<211> 359
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 264
 aatttgga ca tctgaatgg ttggactttc caaggggaagg gaacgggtttc agttatgata 60
 aatgccggcg aagatttgat ctaggagatg ctgagtatct aagataccgg ggaatgcaag 120
 aatttgatca ggctatgcag catgttgaag aagcttatgg ctcatgact tctgagcacc 180
 aatacatatc cagaaaagat gaaggagaca gggtcacgt ctttgaaagg ggaaatcttg 240
 tgtttgtctt caatttccat tggataata gctacacgga ctaccatgta ggctgcttga 300
 agcctggaaa gntaagattg tcttaaatc agatgacgcc ttgtttggag ggtatagta 359

<210> 265
 <211> 451
 <212> DNA
 <213> *Pinus radiata*

<400> 265
 atgcattggg tcactctgat gatggattgc gcaatactga ggacgcgtca catgactctg 60
 aagccaatgc tgtgcctatc caggccatcg aagaacaaac tactaagcca atgcaaaaaca 120
 gagttgagct tgaagatcgg ccaaaagtgt tccctccacc tgggagtggc caaaggattt 180
 atgaaataga tccattgttg aataactatc gtgaacatct tgattatcga tttgcgcagt 240
 ataagaaaac aagagagttg attgataaat atgaaggtgg cttggaagca ttttctaggg 300
 gttatgaaaa gatgggattt aatagaagtg cggctggaat cacatacaga gagtgggcac 360
 ctggtgctaa gggggcatca cttataggag atttcaacaa ctggaatccc aatgctgatg 420
 ttatgctaag aacgagtttg gagtatggga g 451

<210> 266
 <211> 375
 <212> DNA
 <213> *Pinus radiata*

<400> 266
 gagatttcaa caactggaat cccaatgctg atgttatgac taagaacgag tttggagtat 60
 gggagatatt tttaccaaac aatgcagatg gttctccacc aattcccat ggatctctgtg 120
 ttaagataca tatggataca atttcgggac caaaggacgc aatccctgct tggattaagt 180
 ttgctgttca agctccgggt gagattccat acaatggaat atattatgat cccctctctg 240
 aggataaata tgaatttaag tatcctcgac caaagcagcc caaatcattg cgaatatatg 300
 aagcgcagtgt tggcatgagc agcacggaac ccaaaattaa tacatatgtt gagttcaggg 360
 atgatgtact accac 375

<210> 267
 <211> 408
 <212> DNA
 <213> *Pinus radiata*

<400> 267
 actctgccat gtcattgttg caatcacctt ctccagttgt tgatcgtggg attgcacttc 60
 acaagatgat tcatttcata acaatggcac taggtggcga gggctatctt aattttatgg 120
 gaaatgagtt tggatcccg gaattgattg actttccaag ggaaggaaat ggttggagct 180
 atgaaaaatg tagaagacag tggaaacttag tggacacaga tcacctgaga tacaagtta 240
 tgaataatgt tgacaaagcc atgaatgagc ttgatgagaa atttcatttc ctgcacgt 300
 caaagcaaat agttagcatt gcaaatgaag aagataaggt gattgttttt gaacgaggcg 360
 atatagtgtt tgttttcaac ttccatccca agaatacata tcctgggt 408

<210> 268
 <211> 476

<212> DNA

<213> Pinus radiata

<400> 268

ccgagcctcg	agtgggcacc	tacaaagagt	ttactttaaa	cactcttcct	cgcattaaga	60
agttgggata	taatgttata	cagctgatgg	cagttatgga	acatgcctac	tatgcttcct	120
ttggttatca	ggtcaccagc	tttttcgctg	ccagctctcg	atatggtact	cctgaggagc	180
tcaaggagct	gatcgatacc	gcgcattcaa	tgggcatcac	tgtattgctt	gatgtagtac	240
actctcacgc	ctgcaagaac	gtgctcgatg	gcttgaacca	gttcgatggg	actgaccacc	300
agtacttcca	tggaggacca	aagggatacc	acgacttggt	ggacagtcgt	ctcttcaact	360
actctcatta	tgaggttctc	cgcttcctga	tgtctaactc	gcgcttctgg	atggaagagt	420
atcagtttga	cggtttccgc	tttgatgggtg	ttacgagtat	gttgatatctg	catcac	476

<210> 269

<211> 313

<212> DNA

<213> Pinus radiata

<400> 269

gaacagttca	cccaggata	cgagaagttt	ggactcaacg	ccaagcccga	tggctctatc	60
gtctaccacg	aatgggcccc	gaacgccgta	gaggcctccc	taatcgga	tttcaacaac	120
tgggaccgac	actctcatgc	tatgaccâaa	gatcagtatg	gtgtctgggg	aatcacgatac	180
cctagcatca	acggacagcc	tgctatcccc	cacgattcga	aaataaagggt	ttcgttcggt	240
attcctggcg	gcgagcgtat	cgagcgtctg	cctgcttgga	tcaagcgcgt	caccaggagac	300
ctctctgtct	cgc					313

<210> 270

<211> 258

<212> DNA

<213> Pinus radiata

<400> 270

aacatctatg	atgtacaccc	atcacggatt	acaggtagca	ttcactggga	attatgctga	60
gtactttgga	tttgctactg	atgtagatgc	tgtggtttat	ttgatgctgg	ttaatgacat	120
gattcatggg	ctatttcccc	aggccataac	aattggagaa	gatgtgagtg	gtatgccaac	180
cttttctcgt	tctgtacaag	atggcggagt	gggatttgat	tatcgactcc	atatggcagt	240
agctgacaaa	tggattga					258

<210> 271

<211> 349

<212> DNA

<213> Pinus radiata

<400> 271

cctatccagg	ccttcgaaga	acaaactact	aagccaatgc	aaaacagagt	ngagcttgaa	60
gatcgcccaa	aagttgtccc	tccacctggg	agtggccaaa	ggatttatga	aatagatcca	120
ttgttgata	actatcgtga	acatcttgat	tatcgatttg	cgcagtataa	gaaaacaaga	180
gagttgattg	ataaatatga	aggtggcttg	gaagcatttt	ctaggggtta	tgaaaagatg	240
ggatttaata	gaagtgcggc	tggaatcaca	tacagagagt	gggcacctgg	tgctaagggg	300
gcatacctta	taggagattt	caacaactgg	aatccaatgc	tgatgttat		349

<210> 272

<211> 369

<212> DNA

<213> Pinus radiata

<400> 272

agcctggaaa	gtacaaggtg	gtactggatt	ctgatgaaac	aaaatttggc	ggttttgcca	60
gaatagatca	caatgcaagg	tttcacacta	ctgaggggatg	gtatgatgat	cggccccact	120
cctttcttgt	gtatgcacct	tgacagaactt	cagttgtcta	tagtcttaca	gatgattaaa	180
tgagaataaa	aataagatgt	ttgccttgta	tccaaatttt	accggaagg	aatacatgat	240
cgcaacatgt	ttgtatgact	gaagaaagca	gtatttctaa	aacagatatc	ggaggacatg	300
gcttctccca	ttatcttggt	tttccatata	aatctcactt	gggcatacca	tcttttagttc	360
tgtagtcag						369

<210> 273

<211> 327

<212> DNA

<213> Eucalyptus grandis

<400> 273

ctcctttctc	tctctacaca	tacgctgttt	ctctctcttc	tgcctcctt	cctccttcga	60
accctccacc	tccaccgcg	atcccgatgg	cttcccgcga	caatggcatc	tccggcggca	120
agggcctcat	cgtgagcttc	ggcgagatgc	tcatcgactt	cgtcccgacc	gtgtcggggg	180
tctccctggc	ggaggccccg	gggttcctca	aggcccccg	cggcgcccc	gccaacgtcg	240
cgatcgccgt	gacccgcctc	ggcgcccggt	ccgcgttcgt	cggcaaagct	cggggacgac	300
gagttcgggc	aacaatgctg	gccggat				327

<210> 274

<211> 275

<212> DNA

<213> Eucalyptus grandis

<400> 274

acattttaaa	gcaactatgt	tgacattctg	gtgtgcggta	tgctcacaat	gacaagaact	60
gcattagctt	ttgttaccaa	tagagctgat	ggggagcgag	agttcctatt	ttttcgatcat	120
ccaagtgcgg	ccatgctttt	acatgaatcg	gaaactagat	ggtgaactta	tcagcaaggc	180
aaagatcttc	cattatgggt	ctatcagttt	gattgatgaa	ccctgcaa	cggctcatct	240
tgcagcaatg	aaaattgcc	aaaactcagg	gagcg			275

<210> 275

<211> 362

<212> DNA

<213> Eucalyptus grandis

<400> 275

gcaacaatgg	catctccggc	ggcaagggcc	tcatcgtag	cttcggcgag	atgctcatcg	60
acttcgtccc	gaccgtgtcg	gggggtctccc	tggcgaggc	cccggggttc	ctccaacgcc	120
cccggcggcg	ccccgcgaac	gtcgcgatcg	ccgtgaccgc	cctcggcggc	cggctccgagt	180
tcgtcggcaa	gatcggggac	gacgagttcg	ggcacatgct	ggccgggatc	ctaaacgaca	240
acgggggtcaa	ctgcgacggc	atcaacttcg	accagggggc	gcggaccgcg	ctggccttcg	300
taacgctccg	tgccgacggg	gagcgcgagt	tcatgttcta	ccggaaccgc	agcgccgaca	360
tg						362

<210> 276

<211> 543

<212> DNA

<213> Eucalyptus grandis

<400> 276

gcttagtgct	cccacaagcc	caaaaatttt	attaggatta	tttatatatc	ttaagaaagc	60
aaaggagtct	gtgacacat	acgcagggga	gcaatgggaa	tacagaagca	gcaggaaatgc	120
taaccagact	ctcttcaatt	gaaaatggaa	gcaagcaacg	actagtccta	agggaataatc	180
agagaatgga	agaattggag	cttgttcgaa	tgctttattt	cgtgccatcg	atcaagctga	240

ggacatcagc	ctcggtcggg	agggcgggga	tcgctccctt	cttgggtggg	gtgatggctc	300
cgcacgcgtt	tgcaaacttc	aggactttcc	tcaattttcc	ttcatcttcg	agaatggagc	360
ggtcgtcaan	aatgtttgcag	aggagtgtccc	cgacaaagga	atcaccagcc	ccggttgtgt	420
caaccgtgtt	aacatggaat	gcttcnecat	gtccatgaaa	atgcttgggt	tagtatctac	480
aaccgtgctc	acccaaagta	acaaggagaa	gtgtcaagtt	ggggtgccac	agtgtcattg	540
cat						543

<210> 277

<211> 163

<212> DNA

<213> Eucalyptus grandis

<400> 277

agcntttggg	acaaggcaga	tatcattaaa	gtgagtgatg	ttgaactgga	gttcctcaca	60
gggagtgcac	agattgatga	tgaaaatgca	atgacactgt	ggcaccctca	cttgacactt	120
ctccttggtt	ctttgggtga	gcacggttgt	agatactaca	cca		163

<210> 278

<211> 270

<212> DNA

<213> Eucalyptus grandis

<400> 278

cacggttgac	acaaccgggg	ctggtgattc	ctttgtcggg	gcactcctct	gcaacattgt	60
tgacgaccgc	tccattctcg	aagatgaagg	aaaattgagg	aaagtcctga	agtttgcaaa	120
cgcgtgcgga	ncatcaccac	caccaagaag	ggagcgatcc	ccgccctccc	gaccgaggct	180
gatgtcctca	gcttgatcga	tggcacgaaa	taaagcattc	gaacaagctc	caattcttcc	240
attctctgat	tttcccttag	gactagtcgt				270

<210> 279

<211> 201

<212> DNA

<213> Eucalyptus grandis

<400> 279

cacggttgca	cacaaccggg	gctggtgatt	cctttgtcgg	ggcactcctc	tgcaacattg	60
ttgacgaccg	ctccattctc	gaagatgaag	gaaaattgag	gaaagtcctg	aagtttgcaa	120
acgcgtgcgg	agccatcacc	accaccaaga	agggagcgat	ccccgccctc	ccgaccgagg	180
ctgatgtcct	cagcttgatt	g				201

<210> 280

<211> 319

<212> DNA

<213> Eucalyptus grandis

<400> 280

gcgcccagcg	ggagcgcgag	ttcatgttct	accggaaccc	gagcgcgcgac	atgntgctca	60
agcccagagga	gctcaacctc	gagctgatca	gatctgcgaa	agtctttcat	tatggatcca	120
tcagtttgat	tgtggagcca	tgcatatccg	cccatcttga	agcaatgcaa	gttgccaagg	180
acgctggggc	tctgctctcc	tatgatccaa	acctcagact	accattgtgg	ccatcacctg	240
aggaggctcg	tgagcagatc	aagagcattt	ggggacaaag	gcagatatca	tttaaaagtg	300
gagtgattgt	tgaactgga					319

<210> 281

<211> 446

<212> DNA

<213> Eucalyptus grandis

<400> 281

gcgatcccga	tggcttcccc	caacaatggc	atctccggcg	gcaagggcct	catcgtgagc	60
ttcggcgaga	tgctcattga	cttcgtcccc	accgtgtcgg	gggtctccct	ggcggaggcc	120
ccgggggtcc	tcaaggcccc	cggcgggcgc	cccgccaacg	tcgcgatcgc	cgtgaccgcg	180
ctcggcgggc	ggtccgcgtt	cgtcggcaag	ctcggggacg	acgagttcgg	gcacatgctg	240
gccgggatcc	tgaaggagaa	cgggggtcaac	tgcgacggca	tcaacttcga	ccagggggcg	300
cgtgaccgcg	ctggccttcg	tcacgctccg	cgccgacggg	gagcgcgagt	tcatgttcta	360
ccggaacccg	agcgccgaca	tgctgctcaa	gcccgaggag	ctcaacctcg	agctgattan	420
gatctgcgaa	agtctttcat	tatgga				446

<210> 282

<211> 369

<212> DNA

<213> Eucalyptus grandis

<400> 282

tccaaagaat	tcagcacgag	cttcgaccag	ggggcgcgga	ccgcgctggc	cttcgtcacg	60
ctccgcgccc	acggggagcg	cgagttcatg	ttctaccgga	acccgagcgc	cgacatgctg	120
ctcaagcccc	aggagctcaa	cctcggggct	gatcagatct	gcgaaagtct	ttcattatgg	180
atccatcagt	ttgattgtgg	agccatgcag	atccgccccat	cttgaagcaa	tgcaagttgc	240
caaggacgct	ggggctctgc	tctcctatga	tttaaaccctc	agactaccat	tgtggccatc	300
acctgaggag	gctcgtgagc	agatcaagag	catttggggac	aaggcagata	tcattaaagt	360
gagtgatgt						369

<210> 283

<211> 583

<212> DNA

<213> Eucalyptus grandis

<400> 283

ccgcgatccc	gatggctttc	cgcaacaatg	gcattctccg	cggcaagggc	ctcatcgtga	60
gcttcggcga	gatgctcatt	gacttcgtcc	cgaccgtgtc	gggggtctcc	ctggcggagg	120
ccccgggggt	cctcaaggcc	cccggcgggc	ccccgcgcaa	cgtegcgac	gccgtgacc	180
ggcttgggcg	ccggtccgcg	ttcgtcggca	tgctcgggga	cgacgagttc	gggcacatgc	240
tggccgggat	cctgaaggag	aacgggggtca	actgcgacgg	catcaacttc	gaccaggggg	300
cgcggaccgc	gctggccttc	gtcacgctcc	gcgccgacgg	ggagcgcgag	ttcatgttct	360
accggaaccc	gagcgccgac	atgctgctca	agcccaggga	gctcaacctc	gagctgatca	420
gatctgcgaa	agtctttcat	tatggatcca	tcagtttgat	tgtggagcca	tgcatatccg	480
ccatcttgaa	gcaatgcaag	ttgccaagga	cgctggggct	ctgctctcct	atgatccaaa	540
cctcagacta	ccattgtggg	catcacctga	ggaggcttcg	tga		583

<210> 284

<211> 305

<212> DNA

<213> Eucalyptus grandis

<400> 284

ctccttcctc	cttcgaaccc	tnaccccgcg	atcccgatgg	cttcccgcga	caatggcatc	60
tccggcgcca	agggcctcat	cgtgagcttc	ggcgagatgc	tcattgactt	cgtcccagcc	120
gtgtcggggg	tctccctggc	ggaggccccc	gggttcctca	aggcccccgg	cggcgccccc	180
gccaacgtcg	cgatcgccgt	gacccgcctc	ggcgcccggt	ccgcgttcgt	cggcaagctc	240
ggggacgacg	agttcgggca	catgctggcc	gggatcctga	aaggagaacg	gggtcaactg	300
cgacg						305

<210> 285

<211> 403

<212> DNA

<213> *Eucalyptus grandis*

<400> 285

tctacacata	cgctgtttct	ctctcttctc	gcctcctctg	caaatccatc	tccttctctc	60
ttcgaaccct	ccaccgcga	tcccgatggc	ttcccgaac	aatggcatct	ccggcggcaa	120
gggcctcatc	gtgagcttcg	gcgagatgct	cattgacttc	gtcccgaccg	tgctgggggt	180
ctccctggcg	gaggcccccg	ggttcctcaa	ggcccccg	ggcgcccccg	ccaacgtcgc	240
gacgcccgtg	accgcctcgc	gcggccgggc	cgcgcttcgc	ggcaagctcg	gggacgacga	300
gttcggggcac	atgctggccg	ggatcctgaa	ggagaacggg	gtcaactgcg	acggcatcaa	360
cttcgaccag	ggggcgcgga	ccgcgctggc	cttcgctcacg	ctc		403

<210> 286

<211> 471

<212> DNA

<213> *Eucalyptus grandis*

<400> 286

gttctctcaag	gcccccgcg	gcgccccgc	caacgtcgcg	atcgccgtga	cccgcctcgg	60
cgcccggtcc	gcgttcgtcg	gcaagctcgc	ggacgacgag	ttcgggcaca	tgctggccgg	120
gacctctgaag	gagaacgggg	tcaactgcga	cgccatcaac	ttcgaccagg	gggcgcggac	180
cgcgctggcc	ttcgtcacgc	tccgcgccga	cggggagcgc	gagttcatgt	tctaccggaa	240
cccagcgcgc	gacatgctgc	tcaagcccga	ggagctcaac	ctcgagctga	tcagatctgc	300
gaaagtcttt	cattatggat	ccatcagttt	gattgtggag	ccatgcagat	ccgcccattc	360
tgaagcaatg	caagttgcca	aggacgctgg	ggctctgctc	tcctatgatc	caaacctcag	420
actaccattg	tggccatcac	ctgaggaggt	tcgtgagcag	atcaagagca	t	471

<210> 287

<211> 410

<212> DNA

<213> *Eucalyptus grandis*

<400> 287

tctctctcta	cacatacgtc	gtttctctct	ctcctcgcct	ccttctctct	tcgaaccctc	60
cacctccacc	ggcgatcccg	atggcttccc	gcaacaatgg	catctccggc	ggcaagggcc	120
tcacgttgag	cttcggcgag	atgctcatcg	acttcgtccc	gaccgtgtcg	ggggtctccc	180
tgccggaggc	cccgggggtc	ctcaaggccc	ccggcgccgc	ccccgccaac	gtcgcgatcg	240
ccgtgaccgc	cctcggcggc	cggtccgcgt	tcgtcgccaa	gctcggggac	gacgagttcg	300
ggcacatgct	ggccgggatc	ctgaaggaga	acgggggtcaa	ctgcgacggc	atcaacttcg	360
accagggggc	gcggaccgcg	ctggccttcg	tcacgctccg	cgccgacggg		410

<210> 288

<211> 451

<212> DNA

<213> *Eucalyptus grandis*

<400> 288

cgagttcggg	cacatgctgg	ccgggatcct	gaaggagaac	gggggtcaact	gcgacggcat	60
caacttcgac	cagggggcgc	ggaccgcgct	ggccttcgtc	acgctccgcg	ccgacgggga	120
gcgcgagttc	atgttctacc	ggaaccgcgag	cgccgacatg	ctgctcaagc	ccgaggagct	180
caacctcgag	ctgatcagat	ctgcgaaagt	ctttcattat	ggatccatca	gtttgattgt	240
ggagccatgc	agatccgccc	atcttgaagc	aatgcaagtt	gcaaggacgc	tggggctctg	300
ctctcctatg	atccaaacct	cagactacca	ttgtggccat	cacctgagga	ggctcgtgag	360
cagatcaaga	gcatttgagg	caaggcagat	atcattaaag	tgagtgatgt	tgaactggag	420
ttcctcacag	ggagtgacaa	gattgatgat	g			451

<210> 289

<211> 361
 <212> DNA
 <213> Eucalyptus grandis

<400> 289
 ccatgttaac acggttgaca caaccggggc tggatgattcc tttgtcgggg cactcctctg 60
 caacattgtt gacgaccgct ccattctcga agatgaagga aaattgagga aagtcctgaa 120
 gtttgcaaac gcgtgcggag ccatcaccac caccaagaag ggagcgatcc ctgccctccc 180
 gaccgaggct gatgtcctca gcttgatcga tggcacgaaa taaagcattc gaacaagctc 240
 caattcttcc attctctgat tttcccctag gactagtcgt tgcttgcttc cattttcaat 300
 tgaagagagt ctggttagca ttctgtctgc ttctgtattc ccattgctcc cctgcgtatg 360
 g 361

<210> 290
 <211> 347
 <212> DNA
 <213> Eucalyptus grandis

<400> 290
 gcggcaaggg cctcatcgcg agctcnagcg agatgctgat tgactntgac ccgaccgtgt 60
 cgggtggtctg cctggcggag gccccggggt tcctcacggc ccccgcgagg gccccgcca 120
 acgtggcgat cgccgagacc cggctggggg gccggtccac gtctgctggg aagctcgggg 180
 acgacgagtt canccacatg ctggccggga tcctgaagga gaacggggtc aactgcgacg 240
 gcatcaacta cnaccagagg gcgcggaccg agctgacct caacacgctc cagcccaact 300
 ggaagcgcta gttcntgttc taccggaacc cgagcgcta catgctg 347

<210> 291
 <211> 335
 <212> DNA
 <213> Eucalyptus grandis

<400> 291
 ccacccgcga tcccgatggc ttcccgcaac aatggcatct ccggcggcaa gggcctcctc 60
 gtgagcttcg gcgagatgct cattgacttc gtcccgaccg tgcggggggt ctccctggcg 120
 gaggccccgg ggttcctcaa ggccccggcg ggccgccccg ccaacgtcgc gatcgccgtg 180
 accgcctcgc gcggccgggtc cgcgttcgtc ggcaagctcg gggacgacga gttcgggcac 240
 atgctggccg ggatcctgaa ggagaacggg gtcaactgcg acggcatcaa cttcgaccag 300
 ggggcgcgga ccgcgctggc cttcgtcacg ctccg 335

<210> 292
 <211> 643
 <212> DNA
 <213> Eucalyptus grandis

<400> 292
 ccccggcggc gccccgcca acggcgcgat cgccgtgacc cgcctcggcg gccgggtccgc 60
 gttcgtcggc aagtcgagg acgacgagtt cgggcacatg ctggccggga tcctgaagga 120
 gaacgggggtc aactgcgacg gcatcaacct cgaccagggg gcgcggaccg cgctggcctt 180
 cgtcacgctc cgcgcgacg gggagcgcga gttcatgttc taccggaacc cgagcgcga 240
 catgctgctc aagcccgagg agctcaacct cgagctgac agatctgcga aagtccttca 300
 ttatggatcc atcagtttga ttgtggagcc atgcagatcc gccatcttg aagcaatgca 360
 agttgccaag gacgtgggg ctctgctctc ctatgatcca aacctcagac taccattgtg 420
 gccatcacct gaggaggctc gtgagcagat caagagcatt tgggacaagg cagatatcat 480
 taaagtgaat gatgttgaac tggagttcct cacagggagt gacaagattg atgatgaaaa 540
 tgcaatgaca ctgtggcacc ccaacttgac acttctnctt gttactttgg gtgaacacgg 600
 tgtagatact acaccaagca ttttcatgga catgtggaag cat 643

<210> 293
 <211> 300
 <212> DNA
 <213> *Eucalyptus grandis*

<400> 293
 ccacccgcga tcccgatggc ttcccgcgaa aatggcatct ccggcgggcaa gggcctcatc 60
 gtgagcttcg gcgagatgct cattgacttc gtcccgaccg tgtcgggggt ctccctggcg 120
 gaggccccgg ggttcctcaa ggcccccggc ggcgcccccg ccaacgtcgc gatcgccgtg 180
 acccgctcgc gcggccggtc cgcgttcgtc ggcaagctcg gggacgacga gttcggggcac 240
 atgctggccg ggatcctgaa ggagaacggg gtcaactgcg acggcatcaa cttcgaccag 300

<210> 294
 <211> 329
 <212> DNA
 <213> *Pinus radiata*

<400> 294
 cagagcttgc atgtggatct catcagagag gaaaaaattt tccactatgg ttcaataagc 60
 cttattttcag atccttgcaa atcagcacat ttggctgcaa tcaagatagc aaaagatgct 120
 ggtgttatct tttcatatga tcctaatttg aggctgccgt tatggccatc agaagatgca 180
 gccccggcgg gtattttgag catttgggat tctgcagacg ttataaagct aagtggagcaa 240
 gagattgtat ttttaactga aggtgccgaa tccttgtgat gaatgctgtt gtacgtaaac 300
 tttttcaccc aaatctcaag ctattgctg 329

<210> 295
 <211> 496
 <212> DNA
 <213> *Pinus radiata*

<400> 295
 gtcgttgctt cttactgcat tgagtcattg gaaaatgggt tcagaaaggc tctcaatttg 60
 gaaaagcctg agaagagctt gatcgtttgc tttggggaga tgctcattga ttttgtcccc 120
 acggtctcgg atgtttcgtc ggctgaagcg cccggattcc aaaaggctgc aggtggtgca 180
 cctgctaattg tggctgttgg aatttccagg ctcggtggcc gatccgcatt tgttggcaag 240
 gttggggatg atgagtttgg gcgcatgctt gctgacattc tgagggaaaa caatgtgatg 300
 gaccgaggaa ttagatttga ttcccattgc agaaccgcgc tggcattcgt tactttaaag 360
 atgaatggcg agaggggaatt tatgttctat cgtaatccca gcgctgacat gcttctcaag 420
 gaatctgagc ttgatgcaga gctgatccga gaggcacgca tatttacta tggatcaatc 480
 agtctgattg cagagc 496

<210> 296
 <211> 473
 <212> DNA
 <213> *Pinus radiata*

<400> 296
 gagcagctga cagggtgaatc accacttgtg gtttgctttg gagaaatgct gattgatttc 60
 gtcccaacag ttgccggatt gtcattatct gaagcgcagg ccttcaaaaa ggctcctgga 120
 ggtgcacctg ctaatgttgc tgtttgcata gcaagactag gaggttcac agcatttatt 180
 ggaaagggtg gtgatgacga gtttggatat atgcttgctg atatccttga gaaaaacaat 240
 gtaaataata agggcatgcg ttttgatgct ggagctcgaa ctgctttggc atttgtgaca 300
 ttaaggagtg atggtgaacg tgaatttatg ttttacagaa atccaagtgc agatatgtta 360
 ctgcacgaat cagagcttga tgtggatctc atcagagagg caaaaatttt ccactatggt 420
 tcaataagcc ttatttcaga tccttgcaaa tcagcacatt tggctgcaat caa 473

<210> 297

<211> 369
 <212> DNA
 <213> Pinus radiata

<400> 297
 cagcagacag gtgaatcacc acttgtggtt tgctttggag aaatgctgat tgatttcgctc 60
 ccaacagttg cgggattgtc attatctgaa gcgcaggcct tcaaaaaggc tcctggagggt 120
 gcacctgcta atgttctgtt ttgcatagca agactaggag gttcatcagc atttattgga 180
 aaggttggtg atgacgagtt tggatatatg cttgctgata tcttggagaa aaacaatgta 240
 aataataagg gcatgcgttt tgatgctgga gctcgaactg ctttggcatt tgtgacatta 300
 aggagtgatg gtgaacgtga atttatgttt tacagaaatc caagtgcaga tatgttactc 360
 gacgaatca 369

<210> 298
 <211> 459
 <212> DNA
 <213> Pinus radiata

<400> 298
 gagcagctga caggtgaatc accacttgtg gtttgctttg gagaaatgct gattgatttc 60
 gtcccaacag ttgccggatt gtcattatct gaagcgcagg ccttcaaaaa ggctcctgga 120
 ggtgcacctg ctaatgttgc tgtttgcata gcaagactag gaggttcacg agcatttatt 180
 ggaaagggtg gtgatgacga gtttggatat atgcttgctg atatcttggg gaaaaacaat 240
 gtaaataata agggcatgcg ttttgatgct ggagctcgaa ctgctttggc atttgtgaca 300
 ttaaggagtg atggtgaacg tgaatttatg ttttacagaa atccaagtgc agatatgtta 360
 ctcgacgaat cagagcttga tgtggatctc atcagagagg caaaaatttt ccactatggt 420
 tcaataagcc ttatttcaga tccttgcaaa tcagcacat 459

<210> 299
 <211> 417
 <212> DNA
 <213> Pinus radiata

<400> 299
 gttctgactc agattgcaag tgacatgtct attcttgagg atgaacacct cccacaaatg 60
 catctcctgc acctgttgta tcaattgcag tcaactgataa tgtatctacc ttccgcgaa 120
 aagactttgt atagtatcgg cagcctttgg gtccatcagt tactagaagt aattttaatt 180
 tggaatgccg gagtgacatc accacttcgt cattatcaga gtctcctccc gtcaggaatg 240
 ccacctcttc atcacttatc tttatcaaat ccgcttcctc ccaaagtctg agaatgcctt 300
 tgcgctggtg ccgaattcgg cagcaggcag agcgggtgaa ttttctgttt gggggtagga 360
 aatggaaaaa acttgaggga catggaggaa aactctttaa gattcctgaa gcactca 417

<210> 300
 <211> 359
 <212> DNA
 <213> Pinus radiata

<400> 300
 gtccgtgatc agactaattg atccataatg gaaaatttta gcctgttgga ttaagtccac 60
 gtcaagctca gattcagtta gtagcatatc agcactggga ttccggaaaa acataaactc 120
 tcgttcacca tcggctttca atgtgacaaa agccaaagca gttcgagcac caagatcaaa 180
 gcgcacccct ttgtgtccca cattatcttc tttcagaata tccacaagca tgcgccccaa 240
 ttcatcctcg ccaaccttcc ctataaatgc ggatgaacct ccgagccttg ctataccaac 300
 ggcaacattc gcaggggctc cccctggagc tttcttgaat gcaggagcat cagccaatg 359

<210> 301
 <211> 374

<212> DNA

<213> Pinus radiata

<400> 301

gtccgtgatc	agactaattg	atccataatg	gaaaatttta	gcctgttgga	ttaagtccac	60
gtcaagctca	gattcagtta	gtagcatatc	agcactggga	ttccggaaaa	acataaaactc	120
tcgttcacca	tcggctttca	atgtgacaaa	agccaaagca	gttcgagcac	caagatcaaaa	180
gcgcacccct	ttgtgctcca	cattattttc	tttcagaata	tccacaagca	tgcgccc aaa	240
ttcatcctcg	ccaaccttcc	ctataaatgc	ggatgaacct	ccgagccttg	ctataccaac	300
ggcaacattc	gcaggggctc	cccctggagc	tttcttgaat	gcaggagcat	cagccaatga	360
cactccattg	accg					374

<210> 302

<211> 339

<212> DNA

<213> Pinus radiata

<400> 302

gtccatcagt	tactagaagt	aattttaatt	tggaaatgcc	gagtgcacac	accacttcgt	60
cattatcaga	gtctcctccc	gtcaggaatg	ccacctcttc	atcacttata	tttatcaaat	120
ccgcttcctc	ccaaatgctg	agaatgcctt	tgcgagcctc	atcatcagat	ggccaaagag	180
gcaatctcac	attcgggtca	taggagagca	gggcacctcc	ttttctcgca	attttcatgg	240
ctgcaagatg	agctgaccta	gttggctctg	caatcagact	gattgatcca	tagtgaaata	300
tcgatgcctc	tcggatcagc	tctgcatcaa	gctcagatt			339

<210> 303

<211> 402

<212> DNA

<213> Pinus radiata

<400> 303

gtccatcagt	tactagaagt	aattttaatt	tggaaatgcc	gagtgcacac	accacttcgt	60
cattatcaga	gtctcctccc	gtcaggaatg	ccacctcttc	atcacttata	tttatcaaat	120
ccgcttcctc	ccaaatgctg	agaatgcctt	tgcgagcctc	atcatcagat	ggccaaagag	180
gcaatctcac	attcgggtca	taggagagca	gggcacctcc	ttttctcgca	attttcatgg	240
ctgcaagatg	agctgaccta	gttggctctg	caatcagact	gattgatcca	tagtgaaata	300
tcgatgcctc	tcggatcagc	tctgcatcaa	gctcagattc	cttgagaagc	atgtcagcgc	360
tgggattacg	atagaacata	aattccctct	cgccattcat	ct		402

<210> 304

<211> 468

<212> DNA

<213> Pinus radiata

<400> 304

gcgaatgttg	ccgttggtat	agcaaggctc	ggagggttcat	ccgcatttat	aggggaaggtt	60
ggcgaggatg	aatttgggcg	catgcttggt	gatattctga	aagaaaataa	tgtggagcac	120
aaagggatgc	gctttgatct	tgggtgctga	actgctttgg	cttttgtcac	attgaaagcc	180
gatggtgaac	gagagtttat	gtttttccgg	aatcccagtg	ctgatatgct	actaactgaa	240
tctgagcttg	acgtggactt	aatccaacag	gctaaaattt	tccattatgg	atcaattagt	300
ctgatcacgg	acccctgtaa	gtctgcgcat	ttggctgcca	tgaaaatcgc	tagagacacg	360
ggcagtatac	tgtcttatga	tccaatctc	agattgccat	tatggccatc	agcgagcgaa	420
gctcgggagg	gtatttttaag	catatgggat	aaagcagatt	taattaaag		468

<210> 305

<211> 502

<212> DNA

<213> Pinus radiata

<400> 305

gcgaatggtg	ccgttggtat	agcaaggctc	ggagggttcat	ccgcatttat	agggaaggtt	60
ggcgaggatg	aatttgggcg	catgcttgtg	gatattctga	aagaaaataa	tgtggagcac	120
aaagggatgc	gctttgatct	tggtgctcga	actgctttgg	cttttgtcac	attgaaagcc	180
gatggtgaac	gagagtttat	gtttttccgg	aatcccagtg	ctgatatgct	actaactgaa	240
tctgagcttg	acgtggactt	aatccaacag	gctaaaattt	tccattatgg	atcaattagt	300
ctgatcacgg	acccctgtaa	gtctgcgcat	ttggctgcca	tgaaaatcgc	tagagacacg	360
ggcagtatac	tgtcttatga	tccaatctc	agattgccat	tatggccatc	agcgagcgaa	420
gctcgggagg	gtattttaag	catatgggat	aaagcagatt	taattaaggt	tagtgaagag	480
gaagtaggat	ttttaacagg	ag				502

<210> 306

<211> 379

<212> DNA

<213> Pinus radiata

<400> 306

gaactgcttt	ggcatttgtg	acattaagga	gtgatggtga	acgtgaattt	atgtttttaca	60
gaaatccaag	tgcagatatg	ttactcgacg	aatcagagct	tgatgtggat	ctcatcagag	120
aggcaaaaat	tttccactat	ggttcaataa	gccttatttc	agatccttgc	aaatcagcac	180
atgttggtgc	aatcaagata	gcaaaaagatg	ctggtgttat	tctttcatat	gacctaatt	240
tgaggctgcc	gttatggcca	tcagaagatg	cagcccgggc	gggtattttg	agcatttggg	300
attctgcaga	cgttataaag	ctaagtgagc	aagagattgt	atttttaact	gaaggtgaag	360
atccttgtga	tgatgctgt					379

<210> 307

<211> 233

<212> DNA

<213> Pinus radiata

<400> 307

agtttatggt	tttccggaat	cccagtgctg	atatgctact	aactgaatct	gagcttgacg	60
tggacttaat	ccaacaggct	aaaattttcc	attatggatc	aattagtctg	atcacggacc	120
cctgtaagtc	tgcgcatttg	gctgccatga	aaatcgctag	agacacgggc	agtatactgt	180
cttatgatcc	caatctcaga	ttgccattat	ggccatcagc	gagccgaagc	tgc	233

<210> 308

<211> 377

<212> DNA

<213> Pinus radiata

<400> 308

gaaagctcca	gggggagccc	ctgcgaatgt	tgccgttggt	atagcaaggc	tccgaggttc	60
atccgcattt	ataggggaag	ttggcgagga	tgaatttggg	cgcagtgttg	tggatatatt	120
gaaagaaaat	aatgtggagc	acaaagggat	gcgctttgat	cttgggtgctc	gaactgcttt	180
ggcttttgtc	acattgaaag	ccgatggtga	acgagagttt	atgtttttcc	ggaatcccag	240
tgctgatatg	ctactaactg	aatctgagct	tgaccgtgga	cttaatccaa	caggctaaaa	300
ttttccatta	tggatcaatt	aatctgatca	cggacccctg	taagtctgcg	catttggctg	360
ccatgaaaat	cgctaga					377

<210> 309

<211> 517

<212> DNA

<213> Pinus radiata

<400> 309
 gtcccaacag ttgccggatt gtcattatct gaagcgcagg ccttcaaaaa ggctcctgga 60
 ggtgcacctg ctaatgttgc tgtttgcata gcaagactag gaggttcac agcattttatt 120
 ggaaagggtg gtgatgacga gtttggatat atgcttgctg atatcttgga gaaaaacaat 180
 gtaataata agggcatgcg ttttgatgct ggagctcgaa ctgctttggc atttgtgaca 240
 ttaaggagtg atggtgaacg tgaatttatg ttttacagaa atccaagtgc agatatgtta 300
 ctgcacgaat cagagcttga tgtggatctc atcagagagg caaaaatttt ccactatggt 360
 tcaataagcc ttattttcaaa tccttgcaaa tcagcacatt tggctgcaat caagatagca 420
 aaagatgctg gtgttattct ttcatatgat cctaatttga gctgccgtat ggcatacaaaa 480
 gatgcacccg ggcgggtattt ttgactttgg gattctt 517

<210> 310
 <211> 360
 <212> DNA
 <213> Pinus radiata

<400> 310
 gttgtacgga accttttcca tccaaacctc aaattgcttc tcgtgactga aggccagcaa 60
 ggatgtagat attacaccaa ggatttttagc ggaagagtga aaggcctggc agtgggaagct 120
 gtagacacca ctggtgctgg agatgcgttt gtgagtggaa ttcttagtca attggctaag 180
 gacctcactt tattgcagaa gagagcctga gagaggcatt gaagtttgca aatgcctgtg 240
 gtgcaattac ggttactgag agggggggcaa tccctgctct tcccacacga gaagcagtgc 300
 tagcagctct gacaaaagtt cttgcctgag ctttttatct acattttctt ttttgcatag 360

<210> 311
 <211> 438
 <212> DNA
 <213> Pinus radiata

<400> 311
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 tctgaggtgt ccccgctagt ggtgtgcttt ggggaattgc tgatcgattt tgtcccaacg 120
 gtcaatggag tgtcattggc tgatgctcct gcattcaaga aagctccagg gggagcccct 180
 gcgaatgttg ccgttggtat agcaaggctc ggaggttcat ccgcatttat aggggaaggtt 240
 ggcgaggatg aatttgggcg catgcttggtg gatattctga aagaaaataa tgtggagcac 300
 aaagggatgc gctttgatct tgggtgctcga actgcttttg cttttgtcac attgaaagcc 360
 gatggtgaac gagaagttta tgtttttccg gaatcccagt gctgatatgc tactaactga 420
 atctgacttg acgtggac 438

<210> 312
 <211> 294
 <212> DNA
 <213> Pinus radiata

<400> 312
 gtgaacgtga atttatgttt tacagaaatc caagtgcaga tatgttactc gacgaatcag 60
 agcttgatgt ggatctcatc agagaggcaa aaattttcca ctatgggttca ataagcctta 120
 tttcagatcc ttgcaaatca gcacatttgg ctgcaatcaa gatagcaaaa gatgctgggtg 180
 ttattctttc atatgatcct aatttgaggc tgccgttatg gccatcagaa gatgcagccc 240
 gggcggggtat tttgagcatt tgggattctg cagacgttat aaagctaagt gaggc 294

<210> 313
 <211> 510
 <212> DNA
 <213> Pinus radiata

<400> 313

tcaagggttca	acacaaaaagg	aataccttcg	aacggccggc	ttcaggttta	atagtgaag	60
cattgagtga	agacgacaat	aatgggaaac	catctgaggt	gtccccgcta	gtggtgtgct	120
ttggggaatt	gctgatcgat	tttgtcccaa	cggatcaatgg	agtgtcattg	gctgatgctc	180
ctgcattcaa	gaaagctcca	gggggagccc	ctgcgaatgt	tgccgttggg	atagcaaggc	240
tcggagggttc	atccgcattt	ataggggaagg	ttggcgagga	tgaatttggg	cgcattgctt	300
tggatattct	gaaagaaaat	aatgtggagc	acaaagggat	gcgctttgat	cttgggtgctc	360
gaactgcttt	ggctttttgtc	acattgaaag	ccgatgggtga	acgagagttt	atgtttttcc	420
ggaatcccag	tgctgatatg	ctactaactg	aatctgagct	tgacgtggac	ttaatccaac	480
aggctaaaat	tttccattat	ggatcaatta				510

<210> 314

<211> 487

<212> DNA

<213> Pinus radiata

<400> 314

ttttcggttca	ttatattcat	tgccatcata	ttcctgttct	tgtctgtcct	atcacattat	60
tcagtttagat	tgtaagtttg	cggccatggc	tatgcgcgtt	ccggcaaatt	ccattgctcc	120
attcgacaat	aatgtcgaga	aatctgcacc	cccgtgacg	aattcgagca	catcgtcatt	180
cgctgcacg	ggccgcctcg	cgaagggttaa	tcgatcggct	tcgttgtcgc	tcactattcg	240
gcaacggagg	tctcaagggtt	ctgcaagagc	atcagtagca	gacaacaaaag	agcagctgac	300
aggtgaatca	ccacttgtgg	tttgccttgg	agaaatgctg	attgatttcg	tcccaacagt	360
tgccggattg	tcattatctg	aagcgcaggc	cttcaaaaag	gctcctggag	gtgcacctgc	420
taatgttgct	gtttgcatag	caagactagg	agggtcacn	gcntttattg	gaaagggttg	480
tgatgac						487

<210> 314

<211> 421

<212> DNA

<213> Pinus radiata

<400> 315

cttcaggttt	aatagtgaag	gcattgagtg	aagacgacaa	taatgggaaa	ccatctgagg	60
tgcccccgct	agtggtgtgc	tttggggaat	tgctgatcga	ttttgtccca	acggtcaatg	120
gagtgtcatt	ggctgatgct	cctgcattca	agaaagctcc	agggggagcc	cctgcgaatg	180
ttgccgttgg	tatagcaagg	ctcggaggtt	catccgcatt	tataggggaag	gttggcgagg	240
atgaatttgg	gcgcattgct	gtggatattc	tgaaagaaaa	taatgtggag	cacaaaggga	300
tgcgctttga	tcttggtgct	cgaactgctt	tggtttttgt	cacattgaaa	gccgatgggtg	360
aacgagagtt	tatgtttttc	cggaaatccca	gtgctgatat	gctactaact	gaatctgagc	420
t						421

<210> 316

<211> 420

<212> DNA

<213> Pinus radiata

<400> 316

ggaccctgt	aagtctgcgc	atttggtgct	catgaaaatc	gctagagaca	cgggcagtat	60
actgtcttat	gatcccaatc	tcagattgcc	attatggcca	tcagcgagcg	aagctcggga	120
gggtatttta	agcatatggg	ataaagcaga	tttaattaag	gttagtgaag	aggaagttagg	180
atttttaaca	ggaggtgcag	atccattcga	cgacactgtt	gtacgcaacc	ttttccatcc	240
aaacctcaaa	ttgcttctcg	tgactgaagg	ccagcaaggga	tgtagatatt	acaccaaggga	300
tttttagcgga	agagtgaag	gcctggcagt	ggaagctgta	gacaccactg	gtgctggaga	360
tgcgtttgtg	agtgggaattc	ttagtcaatt	ggctaaggac	ctcactttat	tgacagaaaga	420

<210> 317

<211> 499

<212> DNA

<213> Pinus radiata

<400> 317

ctgcactgag	tcattggaaa	atggttttcag	aaaggctctc	aatttgga	agcctgagaa	60
gagcttgatc	gtttgctttg	gggagatgct	cattgatttt	gtccccacgg	tctcggatgt	120
ttcgttggct	gaagcgcccc	gattccaaaa	ggctgcaggt	ggtgcacctg	ctaattgtggc	180
tggttgaatt	tccaggtctg	gtggccgac	cgcattttgt	ggcaagggtg	gggatgatga	240
gtttgggcgc	atgcttgctg	acattctgag	ggaaaacaat	gtgatggacc	gaggaattag	300
atgtgattcc	catgccagaa	ccgcgctggc	attcgttact	ttaaagatga	atggcgagag	360
ggaatttatg	ttctatcgta	atcccagcgc	tgacatgctt	ctcaaggaat	ctgagcttga	420
tgcaaagctg	atcccagagg	catcgatatt	tcattatgga	tcaatcagtc	tgattgcaga	480
gcccactagg	tcagctcat					499

<210> 318

<211> 364

<212> DNA

<213> Pinus radiata

<400> 318

gcgaagctcg	ggaggggtatt	ttaagcatat	gggataaagc	agatttaatt	aaggtttagtg	60
aagaggaagt	aggattttta	acaggaggtg	cagatccatt	cgacgacact	gttgtacgca	120
accttttcca	tccaaacctc	aaattgcttc	tcgtgactga	aggccagcaa	ggatgtagat	180
attacaccaa	ggatttttagc	ggaagagtga	aaggcctggc	agtggaaagt	gtaaacacca	240
ctgggtgctgg	agatgcggtt	gtgagtggaa	ttcttagtca	attggctaag	gacctcactt	300
tattgcagaa	agaagagggc	ctgagagagg	cattgaagtt	tgcaaatgcc	tgtggtgcaa	360
ttac						364

<210> 319

<211> 298

<212> DNA

<213> Eucalyptus grandis

<400> 319

aagcgattcg	tttcttcgag	ctcaacaccc	gggccaagat	cccctccgtc	gggctgggca	60
cttggcgagc	cgggtgacggc	gtcgacgccg	tcaccaccgc	catcaagggt	gggtacaggc	120
atattgattg	tgctcaagct	tatcaaaatg	agaaggagat	tggtactgct	ctccagaaat	180
tattcagcga	gggtgtggtg	aagcgcgagg	atttgtggat	cacatccaag	ctatgggtgtg	240
ctgatcacgc	accagaaaga	tgttcccaag	gcatttagaa	agaaccctgg	agaaactt	298

<210> 320

<211> 261

<212> DNA

<213> Eucalyptus grandis

<400> 320

gttttcgaga	gagaaatggc	gaaggcgatt	cgtttcttcg	agctcaacac	cgggggccaag	60
atcccctccg	tggggtggg	cacttggcag	accgggtgacg	gcgtcgacgc	cgtcaccacc	120
gccatcaagg	ttgggtacag	gcatattgat	tgtgctcaag	cttatcaaaa	tgagaaggag	180
attggtactg	ctctccagaa	attattcagc	gagggtgtgg	tgaagcgcg	ggatttgtgg	240
atcacatcca	agctatggtg	t				261

<210> 321

<211> 450

<212> DNA

<213> Eucalyptus grandis

<400> 321

ctaggggtgag	atcgaagctc	gcgtttttcga	gagagaaatg	gcgaaggcga	ttcgttttctt	60
cgagctcaac	accgggggcca	agatccccc	cgtcgggctg	ggcacttggc	agaccgggtga	120
cggcgctcgac	gccgtcacca	ccgccatcaa	ggttgggtac	aggcatattg	attgtgtctca	180
agcttatcaa	aatgagaagg	agattgggtac	tgctctccag	aaattattca	gcgagggtgt	240
ggtgaagcgc	gaggatttgt	ggatcacatc	caagctatgg	tgtgctgata	acgcaccaga	300
agatgtttccc	aaggcattag	aaagaaccct	ggagaacttg	cagctcgagt	atctggatct	360
ttacctgata	cactggccgg	tgagcatgag	gaaggctcaa	tttggcttca	agcctgaaaa	420
ccttaccag	cggacatac	ccagtacgtg				450

<210> 322

<211> 347

<212> DNA

<213> Eucalyptus grandis

<400> 322

cgagagagaa	atggcgaagg	cgattcggtt	cttcgagctc	aacaccgggg	ccaagatccc	60
ctccgtcggg	ctgggcactt	ggcagaccgg	tgacggcgctc	gacgcggtca	ccaccgccat	120
caagggttggg	tacaggcata	ttgattgtgc	tcaagcttat	caaaatgaga	aggagattgg	180
tactgtcttc	cagaaattat	tcagcgaggg	tgtggtgaag	cgcgaggatt	tgtggatcac	240
atccaagcta	tgggtgtgctg	atcacgcacc	agaagatgtt	cccaaggcat	tagaaagaac	300
cctggagaac	ttgcagctcg	agtatctgga	tctttacctg	atccact		347

<210> 323

<211> 414

<212> DNA

<213> Eucalyptus grandis

<400> 323

cacgagtcgg	ctggcgaagt	agtcgaagta	ggtgaaggcg	taacccaatg	gaaagtcggc	60
gaccgagtcg	ctatcgaggc	tggagtacct	tgttcccaac	ctgcttgcca	tgctgtgctg	120
actggccgat	acaacgcag	cccagatgtc	gttttcttct	caaccccgcc	gttccatggc	180
acattgacgc	gctggcacct	tcattccggca	cagtgggttg	accgtcttcc	ggataatgtt	240
tctttcgaag	agggcgccct	gtgcgaacca	ctcgtgtgctg	cattggccgg	catcgagcgt	300
tccggtctca	gactcggaga	tcccgtcctt	gtctgtgggtg	ctggaccaat	aggcctaata	360
tctctacttt	cggcccgtgc	tgccgggtgca	gagcctattg	ttataacgga	cctt	414

<210> 324

<211> 464

<212> DNA

<213> Eucalyptus grandis

<400> 324

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gaccgagtcg	ctatcgaggc	tggagtacct	tgttcccaac	ctgcttgcca	tgctgtgctg	120
actggccgat	acaacgcag	cccagatgtc	gttttcttct	caaccccgcc	gttccatggc	180
acattgacgc	gctggcacct	tcattccggca	cagtgggttg	accgtcttcc	ggataatgtt	240
tctttcgaag	agggcgccct	gtgcgaacca	ctcgtgtgctg	cattggccgg	catcgagcgt	300
tccggtctca	gactcggaga	tcccgtcctt	gtctgtgggtg	ctggaccaat	aggcctaata	360
tctctacttt	cggcccgtgc	tgccgggtgca	gagcctattg	ttataacgga	ccttttccaa	420
agccgtctgg	actttgcgaa	gaagctgggtg	cctggcgcttc	gcac		464

<210> 325

<211> 368

<212> DNA

<213> Eucalyptus grandis

<400> 325
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 gaccgagtcg ctatcgaggc tggagtacct tgttcccaac ctgcttgca tgcgtgtcgt 120
 actggccgat acaacgcatg cccagatgtc gttttcttct caaccccgcc gttccatggc 180
 acattgacgc gctggcacct tcatccggca cagtgggtgc accgtcttcc ggataatggt 240
 tctttcgaag agggcgccctt gtgcgaacca ctgcgtgtcg cattggccgg catcgagcgt 300
 tccggtctca gactcggaga tcccgtcctt gtctgtggtg ctggaccaat aggcctaata 360
 tctctact 368

<210> 326
 <211> 350
 <212> DNA
 <213> Eucalyptus grandis

<400> 326
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 cgagctcaac accggggcca agatcccctc cgtcgggctg ggcacttggc agaccggtga 120
 cggcgctgac gccgtcacca ccgccatcaa ggttgggtac aggcattattg attgtgctca 180
 agcttatcaa aatgagaagg agattggtac tgctctccag aaattattca gcgaggggtgt 240
 ggtgaagcgc gaggatttgt ggatcacatc caagctatgg tgtgctgatc acgcaccaga 300
 agatgttccc aaggcattag aaagaaccct ggagaacttg cagctcgagt 350

<210> 327
 <211> 372
 <212> DNA
 <213> Eucalyptus grandis

<400> 327
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 tgacggcgctc gacgccgtca ccaccgccat caagggtggg tacaggcata ttgattgtgc 120
 tcaagcttat caaaatgaga aggagattgg tactgtctc cagaaattat tcagcgaggg 180
 tgtggtgaag cgcgaggatt tgtggatcac atccaagcta tgggtgtgctg atcacgcacc 240
 agaagatgtt cccaaggcat tagaaagaac cctggagaac ttgcagctcg agtatctgga 300
 tctttacctg atccactggc cggtgagcat gaggaagggc tcaattggct tcaagcctga 360
 aaaccttacc ca 372

<210> 328
 <211> 333
 <212> DNA
 <213> Eucalyptus grandis

<400> 328
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 ggctgggcac ttggcagacc ggtgacggcg tcgacgccgt caccaccgcc atcaagggtg 120
 ggtacaggca tattgattgt gctcaagctt atcaaaatga gaaggagatt ggtactgctc 180
 tccagaaatt attcagcgag ggtgtggtga agcgcgagga tttgtggatc acatccaagc 240
 tatggtgtgc tgatcacgca ccagaagatg ttcccaaggc attagaaaga accctggaga 300
 acttgcagct cgagtatctg gatctttacc tga 333

<210> 329
 <211> 377
 <212> DNA
 <213> Eucalyptus grandis

<400> 329
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 gcgttttcga gagagaaatg gcgaaggcga ttcgtttctt cgagctcaac accgggggcca 120

agatccccctc	catcgggctg	ggcacttggc	aggccgatcc	cggcgtcgtg	gccgaggccg	180
tcaccaccgc	cacaaaggct	gggtacaggc	atattgattg	tgctcaagct	tattacaatg	240
agaaggagat	tggtactgct	ctccagaaat	tattcagcga	gggtgtgggtg	aagcgcgagg	300
atgtgtggat	cacttccaag	ctatggtgta	ctgatcacgc	accggaagat	gttcccaagg	360
caatagacag	aaccttg					377

<210> 330

<211> 484

<212> DNA

<213> Eucalyptus grandis

<400> 330

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ggaaaaatgtg	agcttggagg	aaggagcaat	gtgtgaaccc	ctcagtgttg	gtgtacacgc	120
ttgtcgccga	gcaaatatca	atcctgagac	caacatactc	ataataggat	cagggccgat	180
tggtccttgtt	accttattag	cagcccgtgc	ttttggagct	ccgagaatcg	tcatcactga	240
tgtagacgag	tgcagattat	cgattgcaaa	aatgcttggt	gcctctgagg	tggttcaagt	300
ctcaacagat	gttcagctag	tggatgaaga	agtggcgcg	atccaaaatg	caatgggctg	360
cgacattgat	gtgagcttcg	attgtgttgg	ctatgacaag	acaatgacca	cagctttgaa	420
tgcgactcgt	gctggtggca	aagtgtgcct	catcggaacta	gccttgagca	agatgacagt	480
tcct						484

<210> 331

<211> 477

<212> DNA

<213> Pinus radiata

<400> 331

ccaaagggaa	aaaaaatggg	gaaggaggca	atgtctcagg	gtaacgaaaa	tggggaagggt	60
gacaatatgg	ctgcatggct	cactggaata	aacactcttc	gcataccagcc	cttcaaactt	120
ccgcctcttg	gccccatga	tgcgaagggtg	cgcataaagg	ctgtgggtat	ctgtggcagt	180
gacgtccact	atttgaggac	attacggtgt	gcggacttta	ttgtaaaaga	gccaatgggtg	240
attggtcatg	agtctgctgg	aataattgag	gagggttgca	gtgaagtga	acatctgggtt	300
cctggtgacc	gcgtactttg	gagcctggaa	tatcgtgttg	gcgttgtgac	caatgtaagc	360
gaggctccta	caatttgtgt	cccagatga	agttttttgc	aacacctccc	gtgcatgggtt	420
ccttggccaa	tcagattgtt	catcctgcag	atttatgttt	caagttgcca	gataatg	477

<210> 332

<211> 433

<212> DNA

<213> Pinus radiata

<400> 332

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ttcgcatcca	gcccttcaaa	cttcgcctc	ttggcccca	tgatgcgaag	gtgcgcatga	120
nggctgtggg	tatctgtggc	agtgcgtcc	actatttgag	gacattacgg	tgtgcggact	180
ttattgtaaa	anagccaatg	gtgattggtc	atgagtcctg	tggaataatt	gaggaggttg	240
gcagtgaagt	gaaacatctg	gttcctgggtg	accgcgtact	ttggagcctg	gaatatcgtg	300
ttggcgttgt	gaccaatgta	agcnaggctc	ctacaatttg	tgccccgaga	tgaagttttt	360
tgcaacacct	cccgtgcatg	gttccttgge	caatcagatt	gttcatacctg	cagatttatg	420
tttcaagttg	cca					433

<210> 333

<211> 466

<212> DNA

<213> Pinus radiata

<400> 333

gaggaatagg aacaggaccc tcttttgttg ggcacacttg catctgtctt tgttccagca	60
atgtcaggag cagctgctgc gattacactg aataatggcc acaaaatgcc catcattggg	120
cttgagagtgt ggagaatgga gggtcaggaa ataagagacc ttatcttcaa tgcactacac	180
ataggggtacc gtcatttcga ttgtgcagct gattacagga atgaaaagga agttgggtcaa	240
gcacttgccg aggcctttca gcaaggcttg gtgaaacgag aggatatttt tattactacc	300
aagctatgga attcagacca tggacatgtt cttgaggcat gcaaggacag tttaaagaat	360
ctgcagttgg aatatttgga cctgtacttg gttcattttc caatagccac acgacataca	420
ggggttggaa caactgatag tgccttagac gaagatggtg ttctcg	486

<210> 334

<211> 483

<212> DNA

<213> Pinus radiata

<400> 334

gggtaacgaa aatggggaag gtgacaatat ggctgcatgg ctactggaa taaacactct	60
tcgcatccag cccttcaaac ttccgcctct tggcccccatt gatgcgaagg tgcgcatgaa	120
ggctgtgggt atctgtggca gtgacgtcca ctatttgagg acattacggg gtgcggactt	180
tattgtaaaa gagccaatgg tgatttgtca tgagtctgct ggaataattg aggaggttgg	240
cagtgaagtg aaacatctgg ttccctgggtga ccgcgtagct ttggagcctg gaatatcgtg	300
ttggcgttgt gaccaatgta agcgaggctc ctacaatttg tgtcccagaga tgaagttttt	360
tgcaacacct cccgtgcatg gttccttggc caatcagatt gttcatcctg cagattttatg	420
tttcaagttg ccagataatg taagtctcga ggaaggtgac atgtgtgaac cactcagtgt	480
tgg	483

<210> 335

<211> 329

<212> DNA

<213> Pinus radiata

<400> 335

gggtaacgaa aatggggaag gtgacaatat ggctgcatgg ctactggaa taaacactct	60
tcgcatccag cccttcaaac ttccgcctct tggcccccatt gatgcgaagg tgcgcatgaa	120
ggctgtgggt atctgtggca gngacgtcca ctatttgagg acattacggg gtgcggactt	180
tattgtaaaa gagccaatgg tgatttgtca tgagtctgct ggaataattg aggaggttgg	240
cagtgaagtg aaacatctgg ttccctgggtga ccgcgtagct ttggagcctg gaatatcgng	300
ttggcgttgn gaccaatgta agcgaggct	329

<210> 336

<211> 419

<212> DNA

<213> Pinus radiata

<400> 336

ctcagggttaa cgaaaatggg gaagggtgaca atatggctgc atggctcact ggaataaaca	60
ctcttcgcat ccagcccttc aaacttcgc ctcttgccc ccatgatgcg aagggtgcga	120
tgaaggctgt gggatatctgt ggcagtgcg tccactattt gaggacatta cgggtgctcg	180
actttattgt aaaagagcca atgggtgattg gtcagtgcg tgctggaata attgaggagg	240
ttggcagtga agtgaaacat ctgggttcctg gtgaccgcgt agctttggag cctggaatat	300
cgtgttggcg ttgtgaccaa tgtaagcgag gctcctacaa tttgtgtccc gagatgaagt	360
tttttgcaac acctcccggtg catgggttcct tggccaatca gattgttcac cctgcagat	419

<210> 337

<211> 392

<212> DNA

<213> Pinus radiata

<400> 337

ctcagggtaa	cgaaaatggg	gaaggtgaca	atatggctgc	atggctcact	ggaataaaca	60
ctcttcgcat	ccagcccttc	aaacttcgcg	ctcttgcccc	ccatgatgcg	aaggtgcgca	120
tgaaggctgt	gggtatctgt	ggcagtgcg	tccactatct	gaggacatta	cggtgtgcgg	180
actttattgt	aaaagagcca	atgggtgattg	gtcatgagtc	tgctggaata	attgaggagg	240
ttggcagtga	agtgaacat	ctggttcctg	gtgaccgcgt	agctttggag	cctggaatat	300
cgtgttggcg	ttgtgaccaa	tgtaagcgag	gctcctacaa	tttgtgtccc	gagatgaagt	360
tttttgcaac	acctcccgtg	catggttctt	tg			392

<210> 338

<211> 362

<212> DNA

<213> Pinus radiata

<400> 338

ctaaccaaaag	ggaaaaaaa	tggggaaggg	agcaatgtct	cagggtaacg	aaaatgggga	60
aggtgacaat	atggctgcat	ggctcactgg	aataaacact	cttcgcatcc	agcccttcaa	120
acttcgcct	cttgccccc	atgatgcgaa	ggtgcgcatg	aaggctgtgg	gtatctgtgg	180
cagtgcgtc	cactatttga	ggacattacg	gtgtgcggac	tttattgtaa	aagagccaat	240
ggtgattggg	catgagtcgt	ctggaataat	tgaggaggtt	ggcagtgaag	tgaacatctt	300
ggttcctggg	gaccgcgtag	ctttggagcc	tggaatatcg	tgttgcccg	tgtgaccaat	360
gt						362

<210> 339

<211> 417

<212> DNA

<213> Pinus radiata

<400> 339

aaaaaatgg	ggaagggagc	aatgtctcag	ggtaacgaaa	atggggaagg	tgacaatatg	60
gctgcatggc	tactggaat	aaacactctt	cgcattccagc	ccttcaaact	tccgcctctt	120
ggcccccatg	atgcgaaggt	gcgcatgaag	gctgtgggta	tctgtggcag	tgacgtccac	180
tatttgagga	cattacgggtg	tgccgacttt	attgtaaaag	agccaatggg	gattgggtcat	240
gagtcgtctg	gaataattga	ggagggttggc	agtgaagtga	aacatctggg	tcctgggtgac	300
cgcgtagctt	tggagcctgg	aatatcgtgt	tggcgttgtg	accaatgtaa	gcgaggctcc	360
tacaatttgt	gtcccagagat	gaagtttttt	gcaacacctc	ccgtgcatgg	ttccttg	417

<210> 340

<211> 343

<212> DNA

<213> Pinus radiata

<400> 340

ccaaagggaa	aaaaatgggg	aaggaggcaa	tgtctcaggg	taacgaaaat	ggggaagggtg	60
acaatatggc	tgcatggctc	actggaataa	acactcttcg	catccagccc	ttcaaacttc	120
cgctcttg	cccccatgat	gcgaaggtgc	gcatgaaggc	tgtgggtatc	tgtggcagtg	180
acgtccacta	tttgaggaca	ttacggtgtg	cggactttat	tgtaaaagag	ccaatgggtga	240
ttggtcatga	gtctgctgga	ataattgagg	aggttggcag	tgaagtga	catctgggttc	300
ctggtgaccg	cgtagctttg	gagcctggaa	tatcgtgttg	gcg		343

<210> 341

<211> 590

<212> DNA

<213> Pinus radiata

<400> 341

attgggtcatg	agtctgctgg	aataattgag	gaggttggca	gtgaagtga	acatctggtt	60
cctgggtgacc	gcgtagcttt	ggagcctgga	atatactgtt	ggcgttgtga	ccaatgtaag	120
cgaggctcct	acaattttgtg	tcccagagatg	aagttttttt	caacacctcc	cgtgcatggt	180
tccttgcca	atcagattgt	tcatactgca	gatttatgtt	tcaagttgcc	agataatgta	240
agtctcgagg	aaggtgccat	gtgtgaacca	ctcagtgttg	gggttcacgc	ttgtcgccgt	300
gcttctgtag	gccctgagac	aaatgtcttg	gtaatggggg	caggctctat	cggccttgct	360
accgtgctgt	ctgcacgtgc	atttgagct	tcacgaatta	ttattgctga	tgtagatgaa	420
gagcgtctgt	caatggctaa	aaaggttggc	tccgatgaat	gcgtcttagt	ctccagagac	480
tctcaggata	ttgatgaaga	agtgaccgcg	atacaaatg	ccatgggtgg	aaacatagat	540
gtaacttttg	attgtgctgg	ttttgctaaa	accatgtcga	cggctctaaa		590

<210> 342

<211> 372

<212> DNA

<213> Pinus radiata

<400> 342

atctaacc	aaagg	aaaaaa	atggg	gaagg	gagcaatg	tc	cagggt	aaac	gaaaat	gggg	60	
aaggtg	acaa	tatgg	ctgca	tggct	cactg	gaataa	acac	tcttc	gcac	cagcc	cttca	120
aactt	ccgc	tcttg	gcccc	catgat	gcga	aggtg	cgcat	gaagg	ctgtg	ggtat	ctgtg	180
gcagt	gacgt	ccact	atttg	aggac	attac	ggtgt	gcgga	ctttat	tgt	aaag	agccaa	240
tggtg	atttg	tcata	gagct	gctgg	aataa	ttgag	gaggt	tggc	agtg	aa	acatc	300
tggtt	cctgg	tgacc	gcgta	gcttt	ggagc	ctgga	aatatc	gtgtt	ggcgt	tgtg	accaat	360
gtaag	cgagg	ct										372

<210> 343

<211> 378

<212> DNA

<213> Pinus radiata

<400> 343

gtggc	agtg	ca	cg	tc	actat	ttg	agg	acat	tac	gg	tgtg	gc	gg	acttt	att	gt	aaa	ag	agc	60											
caatg	gtg	at	tg	gt	catg	ag	tct	gt	tg	gg	aa	ta	att	gag	ga	gg	tt	gg	cag	ta	ga	aa	ac	120							
atctg	gtt	cc	tg	gt	gac	gc	g	tag	ctt	tg	g	ag	cct	gga	at	at	cg	tgt	tg	g	ac	cc	cc	cg	180						
aatg	ta	ag	cg	agg	ct	cct	ac	a	att	t	gt	g	cc	g	at	g	aa	g	ttt	t	g	ca	a	c	c	cc	cg	240			
tgc	at	ggt	tc	ctt	gg	cca	at	cag	att	gt	tc	at	c	ct	g	cag	a	tt	at	g	tt	c	a	a	g	tt	g	cc	ag	300	
ata	at	g	ta	ag	tct	c	g	agg	aa	gg	t	g	cc	at	gt	gt	ga	acc	act	cag	t	gt	t	gg	g	tt	c	at	g	ctt	360
gtc	g	cc	cg	tg	ctt	ct	g	ta																						378	

<210> 344

<211> 510

<212> DNA

<213> Pinus radiata

<400> 344

agcaat	gtct	cagg	gta	acg	aaa	atg	ggga	aggt	gaca	at	ggct	gcat	gg	ct	cact	gg	60													
aataa	acact	cttc	gcat	cc	ag	cc	ctt	caa	act	tcc	gc	cct	ctt	gg	cccc	at	gat	gc	aa	120										
gg	tgc	cat	g	aagg	ct	gt	gg	gtat	ct	gt	gg	cagt	gac	gc	cact	att	tga	gg	ac	att	ac	g	180							
gt	gt	gc	gg	ac	ttt	att	g	taa	aag	ag	cc	aat	gg	t	cct	ggt	gacc	gc	gt	ag	ct	g	aa	ta	at	240				
tg	ag	ga	ag	tt	gg	cag	tga	ag	tg	aa	ac	at	ct	g	ct	ggt	gacc	gc	gt	ag	cc	300								
tg	ga	at	at	cg	tg	tt	gg	cg	gt	tg	ac	ca	at	g	ta	ag	cg	ag	gc	tc	ct	aca	att	tg	tg	tc	cc	ga	360	
gat	ga	ag	ttt	ttt	g	ca	ac	ac	ct	cc	g	t	g	ca	tg	gt	t	cct	tg	g	cca	at	cag	a	tg	gt	tc	at	cc	420
tgc	ag	att	ta	tg	ttt	ca	ag	tg	cc	aga	ta	tg	ta	ag	gt	ctc	gag	ga	ag	gt	cc	at	gt	gt	ga	480				
acc	act	cag	gt	gtt	gg	ggt	tc	at	g	ctt	gt	gc	510																	

<210> 345

<211> 504

<212> DNA

<213> Pinus radiata

<400> 345

gtctcagggt	aacgaaaatg	gggaagggtga	caatatggct	gcatggctca	ctggaataaaa	60
cactcttcgc	atccagccct	tcaaacttcc	gcctcttggc	cccatgatg	cgaagggtgcg	120
catgaaggct	gtgggtatct	gtggcagtga	cgtccactat	ttgaggacat	tacgggtgtgc	180
ggactttatt	gtaaaagagc	caatgggtgat	tgggtcatgag	tctgctggaa	taattgagga	240
ggttggcagt	gaagtgaaac	atctggttcc	tggtgaccgc	gtagctttgg	agcctggaat	300
atcgtgttgg	cgttgtgacc	aatgtaagcg	aggctcctac	aatttgtgtc	ccgagatgaa	360
gttttttgca	acacctcccg	tgcattggtc	cttggccaat	cagattgttc	atcctgcaga	420
tttatgtttc	aagttgccag	ataatgtaag	tctcgaggaa	ggtgccatgt	gtgaaccact	480
cagtgttggg	gttcatgctt	gtcg				504

<210> 346

<211> 426

<212> DNA

<213> Pinus radiata

<400> 346

gcaatgtctc	agggtaacga	aaatggggaa	ggtgacaata	tggctgcatg	gctcactgga	60
ataaacactc	ttcgcatcca	gcccttcaaa	cttccgcctc	ttggcccca	tgatgcgaag	120
gtgcgcata	aggctgtggg	tatctgtggc	agtgcgtcc	actatttgag	gacattacgg	180
tgtgcggact	ttattgtaaa	agagccaatg	gtgattggtc	atgagtctgc	tggaataatt	240
gaggagggtg	gcagtgaagt	gaaacatctg	gttcctgggtg	accgcgtagc	tttggagcct	300
ggaatatcgt	gttggcggtg	tgaccaatgt	aagcgaggct	cctacaattt	gtgtcccagag	360
atgaagtttt	ttgcaacacc	tcccgtgcat	ggttccttgg	ccaatcagat	tgttcacctc	420
gcagat						426

<210> 347

<211> 534

<212> DNA

<213> Pinus radiata

<400> 347

atttgtgtcc	cgagatgaag	ttttttgcaa	cacctcccgt	gcatgggttcc	ttggccaatc	60
agattgttca	tcttcgagat	ttatgtttca	agtggccaga	taatgtaagt	ctcgaggaag	120
gtgccatgtg	tgaaccactc	agtgttgggg	ttcatgcttg	tcgccgtgct	tctgtaggcc	180
ctgagacaaa	tgtcttggtg	atgggggcag	gtcctatcgg	ccttgtcacc	gtgctgtctg	240
cacgtgcatt	tggagcttca	cgaattatta	ttgctgatgt	agatgaagag	cgtctgtcaa	300
tggctaaaaa	ggttgggtcc	gatgaatgcg	tcttagtctc	cagagactct	caggatattg	360
atgaagaagt	gacccgcata	caaaatgcca	tgggtggaaa	catagatgta	acttttgatt	420
gtgctggttt	tgctaaaacc	atgtcgacgg	ctctaaagct	acgtctgctg	cggttaaggta	480
tgccttgtgg	gaatgggcca	taatgagatg	actgtgccac	tactccagc	tgct	534

<210> 348

<211> 352

<212> DNA

<213> Pinus radiata

<400> 348

gggaaggag	caatgtctca	gggtaacgaa	aatgggggaag	gtgacaatat	ggctgcatgg	60
ctcactggaa	taaacactct	tcgcatccag	cccttcaaac	ttccgcctct	tggcccccac	120
gatgcgaagg	tcgcatgaa	ggctgtgggt	atctgtggca	gtgacgtcca	ctatttgagg	180
acattacggt	gtgcggactt	tattgtaaaa	gagccaatgg	tgattgggtca	tgagtctgct	240
ggaataattg	aggagggttg	cagtgaagtg	aaacatctgg	ttcctgggtga	ccgcgtagct	300
ttggagcctg	gaatatcgtg	ttggcggtgt	gaccaatgta	agcgaggctc	ct	352

<210> 349
 <211> 340
 <212> DNA
 <213> Pinus radiata

<400> 349
 gtctcagggt aacgaaaatg gggaagggtga caatatggct gcatgggtca ctggaataaa 60
 cactcttcgc atccagccct tcaaacttcc gcctcttgcc ccccatgatg cgaagggtgcg 120
 catgaaggct gtgggtatct gtggcagtga cgtccactat ttgaggacat tacgggtgtgc 180
 ggactttatt gtaaaagagc caatggtgat tggatcatgag tctgctggaa taattgagga 240
 ggttggcagt gaagtgaac atctggttcc tggtagaccgc gtagctttgg agcctggaat 300
 atcgtgttgg cgttgtgacc aatgtaagcg aggtcctac 340

<210> 350
 <211> 337
 <212> DNA
 <213> Pinus radiata

<400> 350
 gcaatgtctc agggtaacga aaatggggaa ggtgacaata tggctgcatg gctcactgga 60
 ataaacactc ttgcgcatcca gcccttcaaa cttccgcctc ttggcccca tgatgcgaag 120
 gtgcgcatga aggtgtgtgg tatctgtggc agtgacgtcc actatttgag gacattacgg 180
 tgtgcggact ttattgtaaa agagccaatg gtgattggc atgagctctgc tggataaatt 240
 gaggaggttg gcagtgaagt gaaacatctg gttcctgggtg accgcgtagc tttggagcct 300
 ggaatatcgt gttggcgttg tgaccaatgt aagcgag 337

<210> 351
 <211> 500
 <212> DNA
 <213> Pinus radiata

<400> 351
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 atgaaggctg tgggtatctg tggcagtgc gtcactatt tgaggacatt acgggtgtgcg 180
 gactttattg taaaagagcc aatggtgatt ggtcatgagt ctgctggaat aattgaggag 240
 gttggcagtg aagtgaacaa tctggttccg ggtgaccgc tagctttgga gcctggaata 300
 tcgtgttggc gttgtgacca atgtaagcga ggctcctaca atttgtgtcc cgagatgaag 360
 ttttttgcaa cacctcccgt gcatgggtcc ttggccaatc agattgttca tctgcagat 420
 ttatgtttca agttgccaga taatgtaagt ctcgaggaag gtgccatgtg tgaaccactc 480
 agtgttgggg ttcattgcttg 500

<210> 352
 <211> 589
 <212> DNA
 <213> Pinus radiata

<400> 352
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 cactcttcgc atccagccct tcaaacttcc gcctcttgcc ccccatgatg cgaagggtgcg 120
 catgaaggct gtgggtatct gtggcagtga cgtccactat ttgaggacat tacgggtgtgc 180
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 ggttggcagt gaagtgaac atctggttcc tggtagaccgc gtagctttgg agcctggaat 300
 atcgtgttgg cgttgtgacc aatgtaagcg aggtcctac aatttgtgtc ccgagatgaa 360
 gttttttgca acacctcccg tgcattggtc cttggccaat cagattgttc atcctgcaga 420
 tttatgtttc aagttgccag ataataag tctcaggaag ggtgccatgt gtgaaccact 480

cagtgttggg gttcatgctt gtcgccgtgc ttctgtaggc cctgagacaa atgtcttggt 540
aatgggggca ggctctatcg gccttgtcac cgtgctgtct gcacgtgca 589

<210> 353
<211> 332
<212> DNA
<213> Pinus radiata

<400> 353
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ccgcctcttg gccccatga tgcgaagggt cgcataagg ctgtgggtat ctgtggcagt 120
gacgtccact atttgaggac attacgggtg gcggacttta ttgtaaaaga gccaatgggtg 180
attggctcatg agtctgctgg aataattgag gaggttggca gtgaagtga acatctgggt 240
cctgggtgacc gcgtagcttt ggagcctgga atatcgtgtt ggcgttgtga ccaatgtaag 300
cgaggctcct acaatttgtg tcccagatg aa 332

<210> 354
<211> 312
<212> DNA
<213> Pinus radiata

<400> 354
gctcactgga ataaacactc ttgcaccca gcccttcaaa cttccctctt tggcccccat 60
gatgcgaagg tgcgcatgaa ggctgtgggt atctgtggca gtgacgtcca ctatttgagg 120
acattacggt gtgcggactt tattgtaaaa gagccaatgg tgattgggtca tgagtctgct 180
ggaataattg aggaggttgg cagtgaagtg aaacatctgg ttctgtgtga ccgcgtagct 240
ttggagcctg gaatatcgtg ttggcggtgt gaccaatgta agcgaggctc ctacaatttg 300
tgtcccgaga tg 312

<210> 355
<211> 432
<212> DNA
<213> Pinus radiata

<400> 355
cttcccccg cttccaaggt agtgcagctg atcaagagcc aaggcatcaa caagttgaag 60
ctctacgacg cagaccctgc agctctccat gcattcagtg gtaccgacat taaaatcacc 120
attgcccttc ccaatgagga actctcgaac gttgctcgtc gtctttcgcg agcctatgcc 180
tgggtccaaa agaacgtggg tgccctacgtt ccgggcaccc agattacggc catagctgtc 240
ggcaatgaag tcttcgccgc ttctaataac ctcacctcct acctgtccc tgccatgaag 300
aatattcaca tggctctcgt caaatacaac ctcgacggaa ttatcaaggt gtcgagcccc 360
cttgccacca gtgtgctcca gaactctttc ccgccataac cggctttcaa gagcgacctt 420
gtggaaccac ga 432

<210> 356
<211> 384
<212> DNA
<213> Pinus radiata

<400> 356
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aggcatagct gtagggaacg aggtttacac aggaactgac acgcagttaa tggcaaacct 120
ggttcccgcg atgaaaaaca tccattcggc ccttgtcagc atcgggtgag acatgaatat 180
taaagttacc actccccatt ctcttgctgt acttggaat tcatttccac cgtctgctgg 240
ttcctttgca tcaaactgta agagcctaata gaaaccactt ttggatttgt tgtctcagat 300
tggttctcct ttcttcataa atgcttatcc atattttgca tacaagggtg accccagcca 360
gatatccctg gcttatgtac tatt 384

<210> 357
 <211> 420
 <212> DNA
 <213> Pinus radiata

<400> 357
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 gatggtgata aaataggagt ggactatggc atggacgcaa gccatcttcc atctgcagac 120
 gaggtggttaa ctttgatgaa gtccaacaac attgggaaaa ctagaattta ccaggaaaac 180
 gatgttgtag tgcaagcttt cgcgaattct ggtatcgatg taatagtggg tgtcgctaac 240
 gaagaactga agaacatatc ttccagccaa gactncgcaa accgttgggt tagcgagcac 300
 attgtgccct tctatcccgc caccaatgtc aaatacattg ctgtgggaaa cgaggttttg 360
 ataggcgatg ccaacaacgt accctatctt gttccggcca tgaacaacat tcaaactgcg 420

<210> 358
 <211> 399
 <212> DNA
 <213> Pinus radiata

<400> 358
 ggactacgct ctgttttaggt caacctctac cgtggtgcag gacgagggtc gcagctacat 60
 caacttattc gatgccctcg tcgataccct tctttctgcc atggaggact tggggtatcg 120
 caacatccca ctcatcggtta ctgaaagcgg atggccttct ggtggcaatg atgtggccac 180
 ggttgacaac gctcgcgttt ataacaacaa tctcatccgc catgtgctct caaatgtagg 240
 gactcccaag aggccgggaa cgagcattga gacctacatc ttgcacttt tcaacgagaa 300
 cagaaaagct ggtgatgaga cggagcgtca ctttgggctt ttctacctta accaacaatc 360
 tgtatactct ctaaaacttta ctccgtaact gcgtcgtag 399

<210> 359
 <211> 469
 <212> DNA
 <213> Pinus radiata

<400> 359
 ggactacgct ctgttttaggt caacctctac cgtggtgcag gacgagggtc gcagctacat 60
 caacttattc gatgccctcg tcgataccct tctttctgcc atggaggact tggggtatcg 120
 caacatccca ctcatcggtta ctgaaagcgg atggccttct ggtggcaatg atgtggccac 180
 ggttgacaac gctcgcgttt ataacaacaa tctcatccgc catgtgctct caaatgtagg 240
 gactcccaag aggccgggaa cgagcattga gacctacatc ttgcacttt tcaacgagaa 300
 cagaaaagct ggtgatgaga cggagcgtca ctttgggctt ttctacctta accaacaatc 360
 tgtatactct ctaaaacttta ctccgtaact gcgtcgtagt cgcgacgaac aatagagcca 420
 atatgaatat gtccctctata tgtcaactgc ctcgatagat atattatgt 469

<210> 360
 <211> 473
 <212> DNA
 <213> Pinus radiata

<400> 360
 gccatgcgaa gaagacagct gggctgctgt ctcaaactctg cgatcggatt gctactgtaa 60
 ctgttgcttg accatttttaa tgtacgttat ggcttcgttc caacgccagc cttgtacatt 120
 gcaggccttt gcattctgca ttattgttct ttgtctcttc tatgcagacg ctggaacagt 180
 agggatttgc tatggacggg tggctgacaa tttggcggca ccggccgatg tggtaggcct 240
 gctgaaagac aacaacatca gcaaagtgcg gctcttcgac tcagaccctg cgggtgcttca 300
 ggccttcgct gggctcggaga tcggactcat gacagctgtc cccaacgagt tggtggagag 360
 catcggttagc aaccgcggagg ctgccgcagg gtgggtgcag ggaaacgttg tgcccttcca 420

cccggcgacc cggatcgaat acatcgcggt gggcaacgag gttttgcaca gca 473

<210> 361
 <211> 441
 <212> DNA
 <213> Pinus radiata

<400> 361
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 ttcttgga tctacccgtt cttcgccctgg agcgcgaaacc ccgccaacgt gtctctggac 120
 tacgctacgt tgagcctgga ccgcaacacg gcggaattcc aagacgccgg gctcagctac 180
 tccaacatgc tggacgcccc gctggacgcc gtgctggcag ccatggaccg gctcggattc 240
 cccagcggtta atgtgggtcat tggcgagaca ggggtggcccc caaaaggcga cgacaatcag 300
 ccggggacca atgtcccga cggcacgctg tacaaccagc agctcgtaca aaaggccctc 360
 gccgaccgc caggggggac accccggcgc cccgngcct tcatccccac ctatatatttc 420
 tccctcttta acgaggacca g 441

<210> 362
 <211> 351
 <212> DNA
 <213> Pinus radiata

<400> 362
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 ttctgtcaca gaacggcggt cccttcattg cggtatgtcta tccatacttc agctacatcg 120
 gcaacccaag caacattcat ttggactacg ctctctttca gcccacggct acgcccgtga 180
 cagacaaaga tcacagctac agcaacctgt tcgatgccat ggttgatact cttttgtcgg 240
 ccatggaagc ctccgggtat cccaacatcc cgatcgtcat taccgaaagt ggatggcctt 300
 ctgctggcgc ggaagtggcc accattgaga atgctcagac ctataacaat a 351

<210> 363
 <211> 388
 <212> DNA
 <213> Pinus radiata

<400> 363
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 agtgaactac gggatgcaag gagacaacct gccacctgca gaccagggtg taactttgct 120
 gaacggccac aacatcgga aaatgaagct tttcaatcca gacgggtggg cattgaatgc 180
 ttttgcaaat tctgggatcg atgtaatcgt aggagtcagt aacaacgatt tgcaggccat 240
 ctctccagc caggactcag caaatgggtg ggttaatgac aatattgtgc gctattccag 300
 caccagtatc aaatatattg cgggtgggcaa cgagggtttt cctagcacgc agtaccgtat 360
 cgtatcttgt tccagccatg aacaacat 388

<210> 364
 <211> 560
 <212> DNA
 <213> Pinus radiata

<400> 364
 gtgggctctg gttttgctgt ctggactggc tctttcaa at gctctgtcca gcacaagtgc 60
 caccacaaca ggaatcaact atggacaagt tgcagacgac ttgccaccac cggaactagt 120
 agtgggtctt ttgcagacca gcaatatcgg cagaataaaa ctctacactg taaatgcgac 180
 agtcctgaaa gcattttgcaa acactgggtat agaattgatt gttggagtgg caaatgatat 240
 cattggcaac ttgacagatt caaactcagc cactgaatgg gtcaatgaaa acattcaaac 300
 ttacttacca gccacaaaga tcataggtat agcagtaggg aacgagggtt acacaggaac 360
 tgcacacaag ttaatggcaa acctagttcc tgcaatgcaa aacattcatt cggccctagt 420

cagcattggt	gcggacacgg	atattataat	tagcactccc	cattctcttg	gtgtacttgc	480
gacttcatat	ccaccatctg	ctggttcatt	tcaaccagga	ctggagagcc	tactggaaca	540
gcttttggct	ctcctgtctc					560

<210> 365

<211> 494

<212> DNA

<213> Pinus radiata

<400> 365

ggagtttggc	gcagcgttta	ccagccctag	gcgttgacta	tggacaaaact	gcagacaatc	60
ttcctccacc	atctgcagta	gcaaagctgg	ttcagagtac	aagtatttca	aagttgagac	120
tatatggagc	agatcctgca	attcttcaag	catttgctaa	cacaggaatt	gggttagttg	180
taggcattgg	taacgatcaa	atcccatctc	tgaaccagct	ggctgttgca	cagaattgga	240
ttaagaacaa	tatcgttcct	tttgttcctg	ccactgatat	cattggaatc	tcggtgggga	300
acgaggttct	gttcagtggg	gatgggagtc	tgatttccca	gctcctccct	gcattgcaga	360
acctacacac	tgcccttggt	gaggtttcac	ttgaccagca	aattaaggtc	tccacacctc	420
attctctggc	catactttct	acatctgtcc	ccccatctgc	tggccgtttc	aatgaaagtt	480
ttgacatgaa	atcc					494

<210> 366

<211> 365

<212> DNA

<213> Eucalyptus grandis

<400> 366

acgaattgga	atgataatga	cccgtccatc	ttcgatataa	acattgttgg	tggettacaa	60
ggcgaatacc	agataacaaa	tggtatggc	cccagtactg	ccccacaact	cttacgggat	120
cattggaata	attacattac	cgagcaggac	ttccgattta	tggcgaccaa	taatgtaact	180
gccgtgagga	ttccggtagg	atgggtggatt	gcatatgata	caacaccgcc	gaagcctttt	240
gtgggaggct	cgctgtatgc	actggacatg	gcttttacat	gggcagagaa	ttatcgtatg	300
aaggtaatat	ttgatctcca	tgctgctcca	gggtcgcaaa	atgccgaatc	ttatagtgcg	360
acgag						365

<210> 367

<211> 435

<212> DNA

<213> Pinus radiata

<400> 367

cagcggcggg	ccttaatcat	gttcgtatcc	ccatcgggta	ttgggcttac	gatgtttcgg	60
gcggagaacc	gttccatcaa	ggacaggctg	attatttggt	taaggctatt	ggatgggcac	120
agaagcacia	tatcaagggt	atcgctcgacc	tgcattgggt	cccaggcagt	cagaacgggt	180
ttgacaattc	cggcctccta	acatcgacac	cctcatggga	cacaaacagc	acaaatattg	240
cccgaggcag	caacatcatc	aagaaattag	ccgcccattt	tgccatgcag	accaacgtcg	300
tgactgcaat	tgctcctcta	aatgagccag	caggatatct	tagccacagt	ctcctcgata	360
ctgcgaacaa	cattggctcg	nagttatggg	agtatccgca	ctccatttgg	caattcaacg	420
caaagccaca	tgctt					435

<210> 368

<211> 630

<212> DNA

<213> Pinus radiata

<400> 368

ctttcatcac	agaggagatt	tcgttttcat	gtccaagaac	gggataagtg	ctgtcagaat	60
tccagttgga	tggtggattg	ctagtgatcc	atatacctct	gctccttttg	ttggaggatc	120

tctagcttgt	ctcgacaaag	ctttctcgtg	ggcacagAAC	catgacatta	aggtgattat	180
cgatctccat	gctgctccgg	gctcacaaaa	cggatgatgag	cacagtggca	ccagagatgg	240
atztatagaa	tggcctgagt	cgcaagagaa	catcgacaag	agtctatctg	tcattgattt	300
tcttgctgcg	agatatgctg	cacaccctgc	ccttttgggc	attgaactat	tgaatgaacc	360
acggtctcct	gcagtaagtt	tgaacaatgt	gactgattac	tattcacggg	gttacgacat	420
agttcgaaag	tattcgtcgt	cggcgtatgt	gataatgtgc	aacagaatcg	gccctgctga	480
tcccaaggag	ttgtttcaaa	tgaacaacgg	cttatccgcg	acagttgtgg	atgtgcatta	540
ttacaatctc	tacgatgacg	ccactttcaa	aaatatgacg	gttcagcaga	acatcgacta	600
catcaaaacc	acaagagctc	aaactctgca				630

<210> 369

<211> 507

<212> DNA

<213> Pinus radiata

<400> 369

aacggccttg	gacctgacaa	agctcctcaa	gtcatgaatg	atcactggaa	cagcttcatt	60
acggagagtg	actttgcatt	catgtccagt	aatgggtataa	atgctgtgag	aattccagtt	120
ggatgggtgga	ttgccagtga	ccccaatcct	cctgctccgt	ttgtaggagg	atctctgaaa	180
gctctggata	acgcattcac	atgggctaag	aatcataaca	taggggtaat	tgtggatctc	240
catgctgctc	cgggttccca	aaacggagat	gcacacagcg	gcacgagaga	tggatatctt	300
gagtggcctg	attcacaaga	caacatcgat	aaaagtatat	cagtaatcga	ctttctcgtc	360
ggcaggtatg	cttcaaaactc	agctctcctg	ggaattgagt	tgctgaatga	accccgagca	420
cccgggtgtac	cgggtgaacac	attgaaaaca	tattataaaa	ggggttatga	caccgttcga	480
aagcattcgt	cctctgccta	tgtgata				507

<210> 370

<211> 480

<212> DNA

<213> Pinus radiata

<400> 370

caatagtgtg	catatcaaag	tcttcaatgg	aatgtacatg	caggcacaaat	ctaaagatca	60
gctgactgcc	gatttcgaag	gggagcctgg	ttgggacgac	aataatgctg	caactttcga	120
gatgaccatc	gtaaggacgt	tgcaggggga	gtttcaaata	tcaaacgggt	atggaccgga	180
gaaagctaca	caagtcttga	acgaacatcg	aagcactttc	atcacagagg	atgatttcgt	240
tttcatgtcc	aagaacggga	taagtgtctg	cagaattcca	gttgatgggt	ggattgctag	300
tgatccatat	cctcctgctc	cttttgttgg	aggatctcta	gcttgtctcg	acaaagcttt	360
ctcgtgggca	cagaaccatg	acattaaggt	gattatcgat	ctccatgctg	ctccgggctc	420
acaaaacggt	gatgagcaca	gtggcaccag	agatggattt	atagaatggc	ctgagtcgca	480

<210> 371

<211> 366

<212> DNA

<213> Pinus radiata

<400> 371

gatcaattga	ctgccgactt	ccaaggtaag	cctggatgga	atgatggcaa	tgccgcaaca	60
ttcgagatga	acgttgtaac	tggagataat	ggcataggag	gggagtacca	gctaacaaac	120
ggccttggac	ctgacaaagc	tcctcaagtc	atgaatgatc	actggaacag	cttcattacg	180
gagagtgact	ttgcattcat	gtccagtaat	ggataaaatg	ctgtgagaat	tccagttgga	240
tgggtggattg	ccagtgaccc	caatcctcct	gctccgtttg	taggaggatc	tctgaaagct	300
ctggataacg	cattcacatg	ggctaagaat	cataacatag	gggtaattgt	ggatctccat	360
gctgct						366

<210> 372

<211> 427

<212> DNA

<213> Pinus radiata

<400> 372

ggaatgcgcc	ggtaataaag	aactgtgcgg	tcgcaacggt	acgttgcaga	ctattggcat	60
aggcataaac	ggtgtacggc	ggcgggcatt	ccccgattt	caccatcccc	tgctctgcc	120
gccattcacg	catgtaatgg	cccatatata	cttcgagcac	gccacctttg	gtggtgagtt	180
gcccaccggg	gacgtcccat	tctggccatt	tattcggcgt	cgactgctcc	agcacactgg	240
ccattgttcg	ccagcggngc	acgtaagtta	tggcggctca	tcagagcac	ttgctgtagc	300
tgatagcctt	ccggtacgnt	tgtgcctgag	cggtttgaag	cgagttaaag	tatccctgcc	360
acagctgcgg	gattagcggt	ttgttcaatc	ctggcacctc	ttttggttat	caatcactaa	420
gagtgtg						427

<210> 373

<211> 384

<212> DNA

<213> Eucalyptus grandis

<400> 373

atgaatatta	tctgcacggt	atgaatatta	tcgcggttcc	agnggggcaa	aaagaatcga	60
ttctttttgc	ccctctgaat	actatctgca	cgttatgaat	atcttggaaac	tgatggtcgt	120
ggtggatatt	ttgatgaata	cgggatcatc	cgtgatatta	ttcaaaacca	tcntttgcag	180
gttttctgtc	tggttgccat	ggaaaanccc	gtatctctca	aaccagagca	caattcgcga	240
tgagaaagtg	aaggtccttc	aatcagttat	tccgattaca	gatgaagagg	ttgttcttgg	300
acaatatgaa	gnttnagggn	cgatccaatg	tccttgacaa	ttcaaatact	cccacttttg	360
caactatggg	tctacgtata	cata				384

<210> 374

<211> 368

<212> DNA

<213> Eucalyptus grandis

<400> 374

ggcagggaaa	gctctaaact	caagaaaagc	agagatacgt	gtccaattta	aggatgttcc	60
tggggatata	ttcaaagtga	agaagcaagg	gagaaatgag	ttcgtaattc	gcctacaacc	120
ttctgaagcc	atgtacatga	aactcacggt	caagcagcct	gggttgata	tgtcaaccgt	180
gcagagtga	cttgatttgt	catatcggca	acgttatcaa	ggagtcgtaa	ttcctgaggc	240
atatgagcgt	cttatacttg	acacgtacat	ttctttcctc	tttatttaga	gtacttccaa	300
cttaaaaaaa	tctcgtagct	ctttgtttgg	agcttagctc	agtggagtag	acttgcattc	360
aggcgggc						368

<210> 375

<211> 161

<212> DNA

<213> Eucalyptus grandis

<400> 375

ggcagggaaa	gctctaaact	caagaaaagc	agagatacgt	gtccaattta	aggatgttcc	60
tggggatata	ttcaaagtga	agaagcaagg	gagaaatgag	ttcgtaattc	gcctacaacc	120
ttctgaagcc	atgtacatga	aactcacggt	caagcagcct	g		161

<210> 376

<211> 283

<212> DNA

<213> Eucalyptus grandis

<400> 376

gtgcagatag	tattcagaga	agatttttga	actgatggtc	gtggtggata	tttggatgaa	60
tacgggatca	tccgtgatat	tattcaaaac	catcttttgc	aggttttctg	tctggttgcc	120
atggaaaaac	ctgtatctct	caaaccagag	cacattcgcg	atgagaaagn	gaaggctcct	180
caatcantac	ttccgattac	agatgaagag	gttgttcttg	gacaatatga	aggttacagg	240
gacgatccaa	ctgtccctga	caattcaaat	actcccactt	ttg		283

<210> 377

<211> 363

<212> DNA

<213> Eucalyptus grandis

<400> 377

cacgggtcaag	cagcctgggt	tggatatgtc	aaccgtgcag	agtgaacttg	atttgtcata	60
tcggcaacgt	tatcaaggag	tcgtaattcc	tgaggcatat	gagcgtctta	tacttgacac	120
aatcaggggc	gaccaacagc	actttgttcg	gagagatgaa	cttaaggcgg	cttgggagat	180
ttttacaccg	atgcttcaca	gaattgacga	tgggtgaattt	aagccaattc	cataccaacc	240
agggagccga	ggtcctgttg	aagcggacga	gctgctggaa	aaagctgggt	acgttcaaac	300
gcatggttac	atttggatcc	ctccaacctt	gtagatatga	agacaccgcc	acaaataaat	360
ttc						363

<210> 378

<211> 457

<212> DNA

<213> Pinus radiata

<400> 378

gtcgcttaaa	gatgtttgtg	cagtcaggta	ttggtggcag	ctttctgggt	ccactttttg	60
tgcacagtgc	tcttcaaaca	gacctgagg	cagctcaatg	tgcaaattgg	cgtcaactgc	120
gattttctagc	aaatgttgat	ccagttgatg	tcgctcggag	tattgatggg	ttaaaccctg	180
aaactacatt	agttgtttgt	gtatcaaaga	cattcacaac	agcagaaacc	atgctaaatg	240
ctcgaacatt	aaggacatgg	atcacatctg	cccttggttc	tgaagctgtt	gcaaagcaca	300
tgggtggcag	tagtactaac	cttaagcttg	taaaagaatt	tggaatagac	ccacaaaatg	360
cttttgcatt	ctgggattgg	gttggcggtc	gctacagcgt	gtgcagtgtc	gtgggtgccc	420
tccccttatc	acttcagtat	gggtttccta	ttgttag			457

<210> 379

<211> 386

<212> DNA

<213> Pinus radiata

<400> 379

gtcgctcggg	gtattgatgg	gttaaaccctg	gnaactacat	tagttgttgt	ggtatcaaag	60
acattcacia	cagcagaaac	catgctaaat	gctcgaacat	taaggacatg	gatcacatct	120
gcccttgggt	ctgaagctgt	tgcaaagcac	atgggtggcag	ttagtactaa	ccttaagctt	180
gtaaaagaat	ttggaataga	cccacaaaat	gcttttgcac	tctgggattg	ggttggcggt	240
cgctacagcg	tgtgcagtgc	tgtgggtgcc	ctccccctat	cacttcagta	tgggtttcct	300
attgttagca	agtttctgga	gggagcaaga	agtatagata	accatttcca	cacaactcca	360
tttgagaaaa	atattcctgt	tttgc				386

<210> 380

<211> 365

<212> DNA

<213> Pinus radiata

<400> 380

tgcagtgtctg	tgggtgccct	ccccttatca	cttcaatatg	ggtttcctat	tgttagcaag	60
tttctggagg	gagcaagaag	tatagataac	catttccaca	caactccatt	tgagaaaaat	120

attcctgttt	tgcttggctt	cctcagtggtg	tggaatgttt	cctttcttgg	gtatccagct	180
agggctatct	tgccatacac	tcaggctctg	gagaagtttg	caccgcacat	ccagcagctt	240
agcatggaga	gtaatgggaa	gggagtttct	attgatgggtg	tgccctcaa	ttttgaggct	300
ggtgaaatag	atthttggaga	acctggtaca	aatggccagc	atagctttta	ccagttaatt	360
catca						365

<210> 381

<211> 491

<212> DNA

<213> Pinus radiata

<400> 381

tcagtgctg	tggttgccct	ccccttatca	cttcaatatg	ggtttcctat	tgtagcaag	60
tttctggagg	gagcaagaag	tatagataac	catttccaca	caactccatt	tgagaaaaat	120
attcctgttt	tgcttggctt	cctcagtggtg	tggaatgttt	cctttcttgg	gtatccagct	180
agggctatct	tgccatacac	tcaggctctg	gagaagtttg	caccgcacat	ccagcagctt	240
agcatggaga	gtaatgggaa	gggagtttct	attgatgggtg	tgccctcaa	ttttgaggct	300
ggtgaaatag	atthttggaga	acctggtaca	aatggccagc	atagctttta	ccagttaatt	360
catcaggggc	gtgtaattcc	ttgtgatttt	attggcatcg	tcaagagcca	gcagccatt	420
tatttacaag	gggaagttgt	gagtaaccac	gatgagctta	tgtctaactt	ttttgcacag	480
cggatgctc	t					491

<210> 382

<211> 446

<212> DNA

<213> Eucalyptus grandis

<400> 382

tatgcgcaga	ggcaaaatca	atgttcggta	tctcagaatt	cctaataaaa	tcagatccaa	60
gtagtgaaaa	gtactctcca	gggttcacgg	ttggcttttt	cggactattg	ggaccataaaa	120
atccctcaag	gccacagtc	agcagatggg	tcttgatcaat	tgattttaca	tatgctgaca	180
tttccacaat	ccaatcctga	agagtatcac	ccgaattatc	tgatcatgaa	cgtggctcat	240
ttattaactc	ccatccaaaa	atgggtgggat	catttcctata	ttcaacgcca	gtaatgggtg	300
tcttccttgt	taggataacc	ttgacataat	ccttgaaagta	ctgccgaata	gaaggatcgt	360
agaaaaacga	atcatttgac	gagcttaaac	caatgccttc	ttcccacgcc	cacttgacgt	420
actgagtctt	gccaccatat	gcttcc				446

<210> 383

<211> 464

<212> DNA

<213> Eucalyptus grandis

<400> 383

tatgcgcaga	ggcaaaatca	atgttcggta	tctcagaatt	cctaataaaa	tcagatccaa	60
gtagtgaaaa	gtactctcca	gggttcacgg	ttggcttttt	cggactattg	ggaccataaaa	120
atccctcaag	gccacagtc	agcagatggg	tcttgatcaat	tgattttaca	tatgctgaca	180
tttccacaat	ccaatcctga	agagtatcac	cogaattatc	tgatcatgaa	cgtggctcat	240
ttattaactc	ccatccaaaa	atggngggat	catttcctata	ttcaacgcca	gtaatgggtg	300
tcttccttgt	taggataacc	ttgacataat	ccttgaaagta	ctgccgaata	gaaggatcgt	360
agaaaaacga	atcatttgac	gagcttaaac	caatgccttc	ttcccacgcc	cacttgacgt	420
actgagtctt	gccaccatat	gcttccaagt	tattaactaa	gcta		464

<210> 384

<211> 385

<212> DNA

<213> Eucalyptus grandis

<400> 384

tatgcgcgaga	ggcaaaatca	atgttcggta	tctcagaatt	cctaatagaaa	tcagatccaa	60
gtagtgaaaa	gtactctcca	gggttcacgg	ttggcttttt	cggactattg	ggaccataaa	120
atccctcaag	gccacagtc	agcagatgg	tcttgatcaat	tgattttaca	tatgctgaca	180
tttccacaat	ccaatcctga	agagtatcac	ccgaattatc	tgatcatgcaa	cgtgggctcat	240
ttattaactc	ccatccaaaa	atgggtgggat	cattcctata	ttcaacgcca	gtaatgggtgt	300
tcttccttgn	taggataacc	ttgacataat	ctttgaagta	ctgccgaata	gaaggatcgt	360
agaaaaacga	atcatttgac	gagct				385

<210> 385

<211> 433

<212> DNA

<213> *Eucalyptus grandis*

<400> 385

tatgcgcgaga	ggcaaaatca	atgttcggta	tctcagaatt	cctaatagaaa	tcagatccaa	60
gtagtgaaaa	gtactctcca	gggttcacgg	ttggcttttt	cggactattg	ggaccataaa	120
atccctcaag	gccacagtc	agcagatgg	tcttgatcaat	tgattttaca	tatgctgaca	180
tttccacaat	ccaatcctga	agagtatcac	ccgaattatc	tgatcatgcaa	cgtgggctcat	240
ttattaactc	ccatccaaaa	atgggtgggat	cattcctata	ttcaacgcca	gtaatgggtgt	300
tcttccttgt	taggataacc	ttgacataat	ctttgaagta	ctgccgaata	gaagggatcg	360
tagaaaaacg	aatcatttga	cgagcttaaa	ccaatgcctt	cttcccacgc	ccacttggac	420
gtactgagtc	ttg					433

<210> 386

<211> 349

<212> DNA

<213> *Pinus radiata*

<400> 386

gggtttgtca	ctactagcgg	caccgagttt	gagttggacg	gnaagccatt	tgcgtttgtt	60
ggcgcaaatt	catattggct	cccacttctg	acggatcctg	atnacgtcga	gtcgacgttc	120
cagcagatgg	aggacgtgg	tatcaagggt	cttcgtactt	ggggcttcaa	tgctattaat	180
gcgactgaat	taccgacggc	gctcgccacc	aaccttacct	actaccaggt	ctgggatgag	240
ggcaccttca	ctctcaatga	aggtccgcag	ggtcttcagc	gcctcgatgc	agtcgtcgcg	300
gcagcgaggc	gacacaatat	caagatgatc	atcgcggttca	cgaacaact		349

<210> 387

<211> 438

<212> DNA

<213> *Pinus radiata*

<400> 387

ctggccctcg	tagaatcctg	ggtccttgga	tgattttccca	aactctgcaa	acagaactgg	60
tttcttcagt	attttgtttg	catcttccaa	atgggttgat	atccaatcat	gtagaaatga	120
aatctgggca	tcctcatttg	atcctgccaa	ccagatatca	gggtaggaat	gaacagttgc	180
aaaatcaatt	cctgtgattt	ggttattggg	gatgaaattt	gtccccacag	agaagccggg	240
attgttccct	ttgttggaat	ctccataaaa	cccttccaa	ccaacctcga	ggagatgact	300
tccatcgatg	gatttgacat	gactagccat	ttcctctatc	catccctgta	tggtagcccc	360
cgaaggatca	ctttgacaac	gaggctcggt	catcaactcc	catgcaaaga	ttgtaggggtc	420
atccttgnag	gctactct					438

<210> 388

<211> 414

<212> DNA

<213> *Pinus radiata*

<400> 388

gggggtttgtc	actactagcg	gcaccgagtt	tgagttggac	gggaagccat	ttgcgtttgt	60
tggcgcaaat	tcataattggc	tcccacttct	gacggatcct	gatgacgtcg	agtcgacgtt	120
ccagcagatg	gaggacgctg	gtatcaagg	tcttcgtact	tggggcttca	atgctattaa	180
tgcgactgaa	ttaccgacgg	cgctcgccac	caaccttacc	tactaccagg	tctgggatga	240
gggcaccttc	actctcaatg	aagggtccgca	gggtcttcag	cgcctcgatg	cagtcgtcgc	300
ggcagcggag	cgacacaata	tcaagatgat	catcgcgttc	acgaacaact	gggtgggata	360
cggaggattg	gatctctatg	ttcgctggat	cattcctggg	agtacgcacg	acga	414

<210> 389

<211> 625

<212> DNA

<213> Pinus radiata

<400> 389

gttgactaga	gtgaacagca	ttactggagt	agcctacaag	gatgacccta	caatctttgc	60
atgggagctc	atgaacgagc	ctcgttgtca	aagtgatcct	tctgggagga	ccatccaggg	120
atggatagag	gagatggcta	gccagggtcaa	atccattgat	ggaaaccatc	ttctggaggc	180
tggtttggaa	ggttttttatg	gagaatacaa	aaaagagatc	aatccaggct	tctctgtggg	240
tacagatttc	atcaccaata	accaaatacag	aggacttgat	tttgcaacag	ttcattccta	300
tcttgacatt	tggtttgctg	gggcagatga	ggagacccag	ctttcatttt	tgcagagttg	360
gataaagaac	catctgcaag	atggaagcag	gatattgaaa	aaaccagttt	tgtttgcaga	420
gtttgggaaa	tcttacaaaa	gcccaggatt	tcacatgagt	gagagagaca	atttacttga	480
tatggtttat	aaacatgtat	atgcatctgc	taaatgggga	ggagcagggtg	gaggggccat	540
gttttggcag	ctgatggcag	aangaatgag	ctcatatgga	gatgggtatg	agattgtttt	600
gtctgagaat	ccatccacag	cagct				625

<210> 390

<211> 78

<212> DNA

<213> Eucalyptus grandis

<400> 390

caccaccggc	aggtgatcca	gagacggatt	ttcggcccat	gcttcgggtca	gcgccggacg	60
cagttgggtc	tggtctggc					78

<210> 391

<211> 178

<212> DNA

<213> Eucalyptus grandis

<400> 391

acccctttca	ggcgttggtt	agcgttcggt	gtgcggcggc	cgttaaacca	gtcgagcacc	60
accggcaggt	gatccagaga	cggattttttg	gcccattgctt	cggtcagcgc	cggaagcagt	120
tgtttctggc	tggcgttgat	ttgcgttttc	agttccggat	gctgggcagg	caagctgt	178

<210> 392

<211> 359

<212> DNA

<213> Eucalyptus grandis

<400> 392

acccctttca	ggcgttggtt	agcgttcggt	gtgcggcggc	cgttaaacca	gtcgagcacc	60
accggcaggt	gatccagaga	cggattttttg	gcccattgctt	cggtcagcgc	cggaagcagt	120
tgtttctggc	tggcgttgat	ttgcgttttc	agttccggat	gctgggcagg	aaagctgttc	180
agcggccagc	cgagtacgcg	accaaaccag	gcgtagatat	caccaaaccg	cgattggcct	240
gcttncagac	cgataaatcc	aggcaccacg	ctgctggcac	tacaccagg	atgtcggcaa	300

gggtggcggaa cacgcagaaa tctgcggccg ctgtgtcagc aacgtcgccg gtgacgggtg 359

<210> 393

<211> 510

<212> DNA

<213> Eucalyptus grandis

<400> 393

acccctttca	ggcgttggtt	agcgttcggt	gtgcggcggc	cgtaaacca	gtcgagcacc	60
accggcaggt	gatccagaga	cggatttttg	gcccattgctt	cggtcagcgc	cggaagcagt	120
tgtttctggc	tggcgttgat	ttgcgttttc	agttccggat	gctgggaggc	aagctgttcc	180
agcggccagc	cgagtacgcg	accaaaccag	gcgtagatat	caccaaaccg	cgattggcct	240
gcttccagac	cgataaatcc	aggcaccacg	ctgctggcac	tacaccagg	atgtcggcaa	300
gggtggcggaa	cacgcagaaa	tctgcggccg	ctgtgtcagc	aacgtcgccg	gtgacgggtg	360
aaaacgtaag	tttgccctgat	gagtcgaatc	atctgttcaa	cagggtctacg	ctggctgtgg	420
ctggtggtaa	gtcgtgtcga	ttatcgatct	gggcagcaaa	tacctgatcc	tccagaactt	480
tgctctgggg	gatacgggcc	cgctgttccc				510

<210> 394

<211> 469

<212> DNA

<213> Pinus radiata

<400> 394

gaggtacgcg	ggtatagcat	gaccgcgtgtt	cagggtgaag	agtttacgtt	cgacaaatgc	60
catcaggttg	tcggttaact	ccatgcctgg	gatgttcggc	agtgcgcctt	tgaactgcgt	120
tttatcgaca	atccattcgc	tgaaggtttc	taccgtcact	tccagcggat	cgtagttgc	180
cgaagccgaa	ggcggtagca	tgcgggtcaac	ggcgggaatcg	acaaagccaa	cgtgttcttc	240
taccacgcct	ttggcgtctt	ccggcagggc	gttcattcaca	tggcctttca	gctgcgtggg	300
accgcgtacc	atgttttcac	aggcgatgat	gttcagcggg	gattcattac	cttgttcttt	360
acgtttcacc	tgcccttttg	cgattgccgg	agcaatacgt	tccagcacia	ccggggccaac	420
ggcggtagtg	actaaatcaa	cctgagcaat	cagatcaacg	acatcatca		469

<210> 395

<211> 443

<212> DNA

<213> Pinus radiata

<400> 395

aatcgcgta	cgaatggtct	gatgaccggc	cagttttccg	aggtagcggg	ttatagcatg	60
accggtgttc	aggggtgaaga	gtttacgttc	gacaaatgcc	atcagggttg	cggttaactc	120
catgcctggg	atgttcggca	gtgcgccttt	gaactgcgtt	ttatcgacaa	tccattcgct	180
gaagggtttc	accgtcactt	ccagcggatc	gttagttgcc	gaagccgaag	gcggtacgat	240
gcggtcaacg	gcggaatcga	caaagccaac	gtgttcttct	acccacgctt	tggcgtcttc	300
cggcagggcg	ttcatcacat	ggcctttcag	ctgcgtggta	ccgcgtacca	tgttttcaca	360
ggcgatgatg	ttcagcgggg	attcattacc	ttgttcttta	cgtttcacct	gccctttggc	420
gattgccgga	gcaatacgtt	cca				443

<210> 396

<211> 252

<212> DNA

<213> Pinus radiata

<400> 396

tctcgtcgag	aatcgcgta	cgaatggtct	gatgaccggc	cagttttccg	aggtagcggg	60
ttatagcatg	accggtgttc	aggggtgaaga	gtttacgttc	gacaaatgcc	atcagggttg	120
cggttaactc	catgcctggg	atgttcggca	gtgcgccttt	gaactgcgtt	ttatcgacaa	180

tccattcgct gaaggtttct accgtcactt ccagcggatc gttagttgcc gaagccgaag 240
gcggtaacgat gc 252

<210> 397
<211> 395
<212> DNA
<213> Pinus radiata

<400> 397
aatcgcgtca cgaatggtct gatgaccggc cagttttccg aggtacgcgg ttatagcatg 60
acccgtgttc aggggtgaaga gtttacgttc gacaaatgcc atcaggttgt cggttaactc 120
catgcctggg atgttcggca gtgcgccttt gaactgcgtt ttatcgacaa tccattcgct 180
gaaggtttct accgtcactt ccagcggatc gttagttgcc gaagccgaag gcggtaacgat 240
gcggtaacac gcggaatcga caaagccaac gtgttcttct acccagcgtt tggcgtcttc 300
cggcagggcg ttcacacat ggcctttcag ctgcgtggta cccgcgtacc atgttttcac 360
aggcgatgat gttcagcggg gattcattac cttgt 395

<210> 398
<211> 422
<212> DNA
<213> Pinus radiata

<400> 398
tctcgtcgag aatcgcgtca cgaatggtct gatgaccggc cagttttccg aggtacgcgg 60
ttatagcatg acccgtgttc aggggtgaaga gtttacgttc gacaaatgcc atcaggttgt 120
cggttaactc catgcctggg atgttcggca gtgcgccttt gaactgngtt ttatcgacaa 180
tccattcgct gaaggtttct accgtcactt ccagcggatc gttagttgcc gaagccgaag 240
gcggtaacac gcggtcaacg gcggaatcga caaagccaac gtgttcttct acccagcgtt 300
tggcgtcttc cggcagggcg ttcacacat ggcctttcag ctgcgtggta cccgcgtacc 360
atgttttcac aggcgatgat gttcagcggg gattcattac cttgttcttt acgtttcacc 420
tg 422

<210> 399
<211> 305
<212> DNA
<213> Eucalyptus grandis

<400> 399
ccgataagaa gtcacatccc gncaagtcca agttccagac ctacctggga cggncctgga 60
agagttctcg aggaccatca tcatggagtc gtcaatcgag gacttcattg atccggcagg 120
ctttatgcca tgggaggggtg atttcgcgct caanaccctg tactatgcgg agtttaacaa 180
caaggggccc ggtgcgaaca tcaacgcccg agtgaagtgg cccggttaca agaagatcaa 240
taagcaggaa gcagccaagt tcaccgctgg gacttttctg gatggggatt ggatcaaggg 300
agcct 305

<210> 400
<211> 372
<212> DNA
<213> Eucalyptus grandis

<400> 400
atcgtctaca acagcaacta cgtcgacggc gtcaacacct tcaagaccgc caccgtcgcc 60
gtcctcgggtg agcagttcct cgccaaggac atcgggttcg agaacgacgc aggcgccatc 120
aagcaccagg ccgtggcgct gaggggtccag tcggacttct cgtcttcta caactgccac 180
atggacgggt accaggacac cctctacacc cagcccacc gccagttcta ccgcgactgc 240
accatctcgg gcaccatcga cttcatcttc ggcgacgcct ccgccatctt ccagaactgc 300
aagatgctcg tccgcaagcc gctggacaac cagcagtgc tgcgcaccgc ccagggnccg 360

aaggagagggc gc

372

<210> 401

<211> 262

<212> DNA

<213> Eucalyptus grandis

<400> 401

gttcttccgg	gagtgcgaca	tctacggggac	tgctcgacttc	atcttcggga	acgccgccgt	60
cgtgctccag	aactgcagcc	tctatgcccc	caagcccatg	cccatgcaga	agaacacccat	120
cacggccccag	aaccgcaagg	acccgaacca	gaacacgggc	atctcgattc	acgcgtgccg	180
gacgaagact	gtgatcaccg	ggagcttgaa	ctatgtcgat	ggagtccaaa	cctgcaaacac	240
cgcaacattc	actgccatag	gaagctactt	catagccaag	gacatcaagt	ttgagaactc	300
ggcaggcgcc	gagaagcacc	aggccgtggc	gctacgcgtc	cagtcgcgaca	tgctccgtaat	360
ttacaactgc	cacatggacg	ccttccagga	caccctctac	gcg		403

<210> 402

<211> 403

<212> DNA

<213> Eucalyptus grandis

<400> 402

gcccgcagtg	gttgtggccc	aggacggaag	eggcaagtac	aagaccatcc	gtgaggctct	60
gaacgaggtt	cctaagaaga	acaacaagac	cttcgtcata	tacatcaagg	aaggagtgtg	120
caaagagaaa	gtactggtag	acaagaagac	gaccaatgtc	atgattatcg	gcgacggccc	180
gacgaagact	gtgatcaccg	ggagcttgaa	ctatgtcgat	ggagtccaaa	cctgcaaacac	240
cgcaacattc	actgccatag	gaagctactt	catagccaag	gacatcaagt	ttgagaactc	300
ggcaggcgcc	gagaagcacc	aggccgtggc	gctacgcgtc	cagtcgcgaca	tgctccgtaat	360
ttacaactgc	cacatggacg	ccttccagga	caccctctac	gcg		403

<210> 403

<211> 408

<212> DNA

<213> Eucalyptus grandis

<400> 403

gcaaggaccc	caaccagaac	accggcattt	cgatccatgc	ttgccagatc	gtcgccgctc	60
cagatctcga	ggcatctaaa	ggaagcatcc	cgacgtacct	cgggcggcca	tggaagatgt	120
actcgagggg	tgtgtacatg	ttgtcctaca	tgggcgatca	cattcacccc	gaaggtggct	180
ggagtgggaa	ggagactttg	cgctagacac	tttgtattac	ggagagtaca	tgaacgatgg	240
gcccggggca	gccgtcgccc	tacgtgtgaa	atggccgggt	ttccgagtca	tcacatccac	300
aacagaggca	aacaaattca	cagtcgcgca	gttcatattt	ggatcttcat	ggttgccgctc	360
caccgggggtg	gcattcgtgg	ctggactatc	aacttgaaag	ttgaaagt		408

<210> 404

<211> 361

<212> DNA

<213> Eucalyptus grandis

<400> 404

gcggcgggcg	agtatccaga	gtggctaggg	gagagagaga	gggagctgct	ggacatgccg	60
gcggcgggag	tacaggcgga	catagtgggt	gcgaaggacg	gagcgagcgg	gacgtacaag	120
acgattgcgg	aggcgataaa	gaaggcgccg	gagagcagtg	gccggaggat	catcatctac	180
gtgagagccg	ggaggtacga	ggaggataac	ttgaagggtg	ggaagaagaa	gacgaacctc	240
atgttcatcg	gcgatgggaa	gggcagaacg	gtcataacgg	gcggcaaaaag	tgtagccgac	300
aagatgacca	cgttccacac	cgcctccttc	gcgggcgagc	ggaccgggtt	cattgccccg	360
a						361

<210> 405

<211> 227

<212> DNA

<213> Eucalyptus grandis

<400> 405

ctacaatcat	caccggtgat	gatagtgtgg	ctgggggttc	ttcettgcgc	ggctctgcta	60
cattcacaat	caccggcgat	ggatttatag	cccgagacat	cgggttccaa	aacacagcgg	120
ggccccaagg	tcaacaggct	gtcgccctaa	ccgtggcctc	cgatcacgcg	gcattctata	180
ggtgcagcat	cgcgggctac	caggacacat	tgtacgcgct	cgtactc		227

<210> 406

<211> 373

<212> DNA

<213> Eucalyptus grandis

<400> 406

tttttttttt	aatctccaaa	cattccaaat	tattgaattc	acaacacaa	ttacagaaac	60
tccccagaa	agaaaggacc	aatactcatt	tttcacagcc	cttcagtgtg	agacactcca	120
gtggacttca	ccaagtccct	ccctgaatca	gctcgggccac	ggtgaacttc	ttcgccctctg	180
ctgggctgg	gatgacatga	taacctggcc	acttcacccg	cttgctcggt	cccgcgcctg	240
gtcccttggt	catgtactcc	ccgtagtaca	gagtcctgag	ggcatgatcg	ccgctccaca	300
ccgaccaccc	tgtgggatca	atgtgatcac	caatgtttga	ttgcatcacc	acagtcctag	360
agtacaactt	cca					373

<210> 407

<211> 190

<212> DNA

<213> Eucalyptus grandis

<400> 407

cccaaccaga	acaccggcat	ttcgatccat	gcttgccaga	tcgtcgccgc	tccagatctc	60
gaggcatcta	aaggaagcat	cccgaacgtac	ctcgggcggc	catggaagat	gtactcgagg	120
gttgtgtaca	tggtgtccta	catgggcgat	cacattcacc	ccgaagggtg	gctggagtg	180
aacggagact						190

<210> 408

<211> 387

<212> DNA

<213> Eucalyptus grandis

<400> 408

cccaaccaga	acaccggcat	ttcgatccat	gcttgccaga	tcgtcgccgc	tccagatctc	60
gaggcatcta	aaggaagcat	cccgaacgtac	ctcgggcggc	catggaagat	gtactcgagg	120
gttgtgtaca	tggtgtccta	catgggcgat	cacattcacc	ccgaagggtg	gctggagtg	180
aacggagact	ttgcgctaga	cactttgtat	tacggagagt	acatgaacga	tgggcctggg	240
gcagccgtcg	gcctacgtgt	gaaatggcct	ggtttccgag	tcatcacatc	cacaacagag	300
gcaaacaat	tcacagtcgc	gcagttcata	tttggatctt	catggttgcc	gtccaccggg	360
gtggcattcg	tggctggact	atcaact				387

<210> 409

<211> 482

<212> DNA

<213> Eucalyptus grandis

<400> 409

gccgtcgggc	ctgggggttcg	acggcggggt	cccttcgggg	ctgacggcgg	acgcgacgg	60
gtgcaaggac	gggggaagcg	ggtgctacgc	gacggtgcag	gccgccgtcg	acgccgcgcc	120

ggagaacgtc	ggcggagggga	agaggttcgt	gatccacatc	aaggaagggg	tgtacgagga	180
aacggtgagg	gtcccgttcg	agaagaagaa	cgtggtgttc	ctgggggacg	gcatgggcaa	240
aaccgtcatc	accgggtcct	ccaacgcggg	gcaacctggg	gtctccacct	acaacaccgc	300
caccgtcgga	gtgctcggcg	acggattcat	ggcaagcggg	ctcacgatcc	agaacaccgc	360
aggtccggtc	accaccagg	cgggtggcgtt	ccggtcggac	agcgatttct	cgggtcatcga	420
gaactgcgag	ttcttgggga	accaagacac	gctctacgcc	cactccctcc	ggcagtacta	480
ca						482

<210> 410

<211> 424

<212> DNA

<213> Eucalyptus grandis

<400> 410

cccaaccaga	acaccggcat	ttcgatccat	gcttgccaga	tcgtcgccgc	tccagatctc	60
gaggcatcta	aaggaagcat	cccgaacgtac	ctcgggcccgc	catggaagat	gtactcgagg	120
gttgtgtaca	tggtgtccta	catgggagat	cacattcacc	ccgaaggggtg	gctggagtgg	180
aacggagact	ttgcgctaga	cactttgtat	tacggagagt	acatgaacga	tgggcctggg	240
gcagccgtcg	gcctacgtgt	gaaatggcct	ggtttccgag	tcacacacac	cacaacagag	300
gcaaacaat	tcacagtcgc	gcagttcata	tttgatctt	catggttgcc	gtccaccggg	360
gtggcattcg	tggttggtg	atcaacttga	aagttgaaag	tgacatttac	agatacgata	420
tggt						424

<210> 411

<211> 519

<212> DNA

<213> Eucalyptus grandis

<400> 411

gaaggacggt	ncgaacgggt	cgtacaagac	gattgcggag	gcgataaaga	aggcgccgga	60
gagcagtggc	cggaggatca	tcactctacgt	gagagccggg	aggtagcagg	aggataactt	120
gaagggtggg	aagaagaaga	cgaacctcat	gttcacgcgc	gatgggaagg	gcagaacggt	180
cataacgggc	ggcaaaagt	tagccgacaa	gatgaccacg	ttccacaccg	cctccttcgc	240
ggcgagcggg	gccgggttca	ttgcccgcga	catgaccttc	gagaactacg	ccgggcccga	300
gaagcaccag	gcggtggctc	tccgggtagg	agctgaccat	ggcgtggtct	ataggtgcag	360
catcgttggc	tatcaggaca	cgctctacgt	ccactcgaat	cgccagttct	tccgtgaatg	420
cgacatctac	gggaccgttg	acttcattct	tggaacgcga	gcccgtgggc	atncaaaaga	480
gcaacatcta	tgcccgggaag	cccatggcca	agcaaaaga			519

<210> 412

<211> 395

<212> DNA

<213> Eucalyptus grandis

<400> 412

ccttcattcca	ttctccactc	ccctgcccc	acacagtaca	agaaatgggt	cgcgggcgga	60
agctcggggc	ctcctccgat	ccccagctcg	aggatgccct	cccttcccc	ccggaggcga	120
taaagaaggc	gccggagagc	agtggccgga	ggatcatcat	ctacgtgcga	accgggaggt	180
acgaggagga	taacttgaag	gtggggaaga	agaagacgaa	cctcatgttc	atcggcgatg	240
ggaagggcag	aacggtcata	acgggcccga	aaagtgtagc	cgacaagatg	accacgttcc	300
acaccgcctc	cttcgcggcg	agcggagccg	gtttcattgc	ccgcgacatg	accttcgaga	360
actacgccgg	gccggagaag	caccaggcgg	tggtct			395

<210> 413

<211> 499

<212> DNA

<213> Eucalyptus grandis

<400> 413

tgagcagttc	actcacaat	tacatcacct	gcttggacgg	tttcgaaggc	tcgtcatcag	60
ctaaatcttc	gatcaagcct	attctcagcg	acttgatata	gagggcaaga	acttctctag	120
ccatatttgt	ttctacttca	tctcctgaag	gacgaagacc	agatgttctg	gagtccttga	180
tcggtgattt	cccatcatgg	gtcacacgaa	aagatcatcg	tctcctgcaa	tctctgggtga	240
acgcagttaa	tgccgacgtg	gtggtggcga	aggacggaac	tggaagttc	aagacagtga	300
aagaggcgat	cgcagctgct	cctagcaaa	cccagaccg	gtacgttatt	tatgtgaaga	360
aaggcacata	caaggagaat	gtggaggtgg	caaagacaaa	gacaaacatc	atgcttggtg	420
gcgacggcat	ggattcaact	gtgatcactg	caagcctcaa	cgtcattgac	ggtgcgacaa	480
cattcaattc	cgcactggt					499

<210> 414

<211> 497

<212> DNA

<213> Eucalyptus grandis

<400> 414

gccggtgaca	ggaggctgct	gcagtcgacg	gcggtgattc	cggatgtggt	ggtggcggcg	60
gacgggactg	ggaactacac	gacgatctcg	gaggcagtgg	cggcggcgcc	ggagaagagc	120
agcaagcggg	acgtgataag	gataaaagacc	ggggtgtaca	gagagaacgt	gcagggtgccg	180
aagaagaaga	ccaacctgac	tttcatcggc	gacgggcgga	ccaccacat	catcaccggc	240
gaccggagcg	tgaagggcgg	cttcaccacc	ttcagagtcg	ccactgtcgc	ggtgcttggc	300
gagcgattct	tgccaaaaaa	cataaccttc	cagaacaccg	ccggcccttc	aaaccaccag	360
gccgttgccc	tccgtgttgg	tgccgatcta	tctgccattt	acgaatgcga	catcctcgcc	420
taccaggaca	ccctctatgt	ccacaaaaac	cgccaattct	ttgtcaagtg	cttaattgcc	480
ggcacagtcg	acttcat					497

<210> 415

<211> 295

<212> DNA

<213> Eucalyptus grandis

<400> 415

gcgggacgta	caagacgatt	gcggaggcga	taaagaaggc	gccggagagc	agtggccgga	60
ggatcatcat	ctacgtgcga	gccgggaggt	acgaggagga	taacttgaag	gtggggaaga	120
agaagacgaa	cctcatgttc	atcggcgatg	ggaagggcag	aacggtcata	acgggaggca	180
aaagtgtagc	cgacaagatg	accacgttcc	acaccgcctc	cttcgcggcg	agcggagccg	240
gtttcattgc	ccgcgacatg	accttcgaga	actacgccgg	gccggagaag	cacca	295

<210> 416

<211> 433

<212> DNA

<213> Eucalyptus grandis

<400> 416

ttcgggggtga	atgtgatcgc	ccatgtagga	caacatgtac	acaaccctcg	agtacatctt	60
ccatggccgc	ccgaggtagc	tcgggatgct	tccttttagat	gcctcgagat	ctggagcggc	120
gacgatcttg	caagcatgga	tcgaaatgcc	ggtgttctgg	ttggggctct	tgcggttctg	180
ggccgtgatg	gtgttctttt	gcttggccat	gggcttcg	gcatagatgt	tgctcttttg	240
gatgaccacg	gctgcgttgc	caaagatgaa	gtcaacggtc	ccgtagatgt	cgcattcacg	300
gaagaactgg	cgattcgagt	ggacgtagag	cgtgtcctga	tagccaacga	tgctgcacct	360
atagaccacg	ccatggtagc	ctcctaccg	gagagccacc	gcctgggtgct	tctccggccc	420
ggcgtagttc	tcg					433

<210> 417

<211> 414

<212> DNA

<213> Eucalyptus grandis

<400> 417

ggcgtccgag	gtgatgcggc	agccctggat	tgtgaaccca	gtgttctggc	ccgggtcact	60
gcgcccgttg	gcgaggatca	cggatataggc	tgagttccca	gactttcgca	acaccagctc	120
acagttcttg	aagacggcag	ctgcgttccc	aaagataaaa	tctatggtgc	catagatgtc	180
gcactcacgg	tagaactggc	ggagtacgag	cgcgtacaat	gtgtcctggg	agcccgcgat	240
gctgcaccta	tagaatgccg	cgtgatcgga	ggccacggnt	agggcgacag	cttggtgacc	300
ttggggcccc	gctgtgtttt	ggaacccgat	gtctngggct	ataaatccat	cgccgggtgat	360
tgtgaatgta	gcagagccgc	gcaaggaaga	ccccagcca	cactatcatc	accg	414

<210> 418

<211> 382

<212> DNA

<213> Eucalyptus grandis

<400> 418

ggctgatgga	cgtggcgagg	ggaggagggg	gagtaccgaa	gcccgcacggc	ggcggcgctg	60
agtatccaga	gtggctaggg	gagagagaga	gggagctgct	ggacatgccg	gcggcgagg	120
tacaggcgga	catagtgggtg	gcgaaggacg	gagcgagcgg	gacgtacaag	acgattgcgg	180
aggcgataaa	gaaggcgccg	gagagcagtg	gccggaggat	catcatctac	gtgcgagccg	240
ggaggtacga	ggaggataac	ttgaagggtg	ggaagaagaa	gacgaacctc	atgttcatcg	300
gcgatgggaa	gggcagaacg	gtcataacgg	gcggcaaaag	tgtagccgac	aagatgacca	360
cgttccacac	cgctccttc	tc				382

<210> 419

<211> 247

<212> DNA

<213> Eucalyptus grandis

<400> 419

ccgccgtgct	ccaggactgc	gacatccacg	cgagacgccc	caaccctggc	cagcgcaaca	60
tggtcaccgc	ccagggccgn	gatgatccca	accagaacac	aggtatagtg	atccaaaagt	120
gcaggatcgg	cgcgacatca	natctcttgg	cagtgaaggg	gagcttccaa	acttatctgg	180
gaaggccatg	gaagatgtac	tcgaggacgg	tgataatgca	gaccgccata	agcgacgtga	240
tcaaccc						247

<210> 420

<211> 471

<212> DNA

<213> Eucalyptus grandis

<400> 420

gcgacatgac	ctttgagaac	tacgccgggc	cggagaagca	ccaggcggtg	gctctccggg	60
taggagctga	ccatggcgtg	gtctataggt	gcagcatcgt	tggctatcag	gacacgctct	120
acgtccactc	gaatcgccag	ttcttccgtg	aatgcgacat	ctacgggacc	gttgacttca	180
tctttggcaa	cgcagccgtg	gtcatccaaa	agagcaacat	ctatgcccg	aagcccatgg	240
ccaagcaaaa	gaacaccatc	acggcccaga	accgcaagga	ccccaaccag	aacaccggca	300
tttcgatcca	tgcttgccag	atcgctcgccg	ctccagatct	cgaggcatct	aaaggaagca	360
tcccagcgta	cctcgggcgg	ccatggaaga	tgtactcgag	ggctcgtgtac	atgttgctct	420
acatgggcga	tcacattcac	cccgaagggt	ggctggagtg	gaacggagac	t	471

<210> 421

<211> 371

<212> DNA

<213> Eucalyptus grandis

<400> 421
 ngaagacgaa cctcatgttc atcggcgatg ggaagggcag aacggtcata acgggcggca 60
 aaagtgtagc cgacaagatg accacgttcc acaccgcctc cttcgcggcg agcggagccg 120
 gtttcattgc ccgcgacatg accttcgaga actacgccgg gccggagaag caccaggcgg 180
 tggctctccg ggtaggagct gaccatggag tggctctatag gtgcagcatc gttggctatc 240
 aggacacgct ctacgtccac tcgaatcgcc agttcttccg tgaatgcgac atctacggga 300
 ccgttgactt catctttggc aacgcagccg tggtcatcca aaagagcaac atctatgccc 360
 ggaagcccat g 371

<210> 422
 <211> 349
 <212> DNA
 <213> Eucalyptus grandis

<400> 422
 ccgggaccta caacgagacg gtgctgctgg acaagagcaa gtggaacgtg ctgatgtacg 60
 gcgacgggaa gacgaagacc atcgtcaccg gcagcaagaa cttcatcgac ggcactccga 120
 ctttcagcac ggcgaccttc gctgttgccg gtaaagggtt tattgcgaga gacatgatgt 180
 tcgtgaacac agccggcgcg gcgaagcacc aggcatggc gttccggctt gggtcggacc 240
 tctcgggtgat ataccgctgc gcctttgatg cgtaccagga cacgctctat gcgcactcga 300
 accgccagtt ctaccgcgac tgcgacatca cgggcacgat cgacttcat 349

<210> 423
 <211> 357
 <212> DNA
 <213> Eucalyptus grandis

<400> 423
 ggagggttgct gcaaattgccg gtgacggcga tacaggcgga cgtgacggta tcgaaggacg 60
 ggaacgggac gtgcaagacg atctcggagg ccatcaagaa ggcgccggac tacggtaccc 120
 gccggtttat catatacgtg cgagccggaa ggtacgagga agataatctg aagggtgggga 180
 ggaagaagac gaacgtgatg ttcgtagggg acgggaagag caacaccatc atctccggcg 240
 gcaagagcat cttcgacaac atgacgacgt tccacaccgc gtccttcgct gccaccggag 300
 ccgggttcat cgctcgggac atccgttcga gaactgggct gggcccgcca agcacca 357

<210> 424
 <211> 346
 <212> DNA
 <213> Eucalyptus grandis

<400> 424
 gggggcggcg gcggcgagta tccagagtgg ctaggggaga gagagaggga gctgctggac 60
 atgccggcg cgagggtaca ggcggacata gtggtggcga aggacggagc gaacgggacg 120
 tacaagacga tcgcggaggg gataaagaag gcgccggaga gcagtggccg gaggatcatc 180
 atctacgtgc aagccgggag gtacgaagag gataacttga aggtggggaa gaagaagacg 240
 aacctcatgt tcatcggcga tgggaagggc aaaacgggtca taacgggagg caaaagtgtg 300
 gccgacaaga tgaccacgtt ccacaccgcc tccttcgcgg cgagcg 346

<210> 425
 <211> 577
 <212> DNA
 <213> Eucalyptus grandis

<400> 425
 gcgacggccg gaccaccacc atcatcaccg gcgaccggac gtgaagggcg gcttcaccac 60
 cttcgagtcc gccaccgtcg cggtggttgg cgagcgattc ttggccaaaa gcataacctt 120

ccagaacacc	gntggccctt	caaaccacca	ggccgttgcg	ctccgggttg	gcgccgatct	180
atcagccctt	tacgaatgcg	acatcctcgc	ctaccaagat	accctctatg	tccacaacaa	240
ccgccaattc	tttgtcaagt	gcttaattgc	cggcacagtc	gacttcatct	ttggtaacgc	300
agctgtcgtc	atccaagact	gtgacatcca	tgcccgaag	ccaaaccctg	gccaaaagaa	360
catggttact	gctcaaggac	gaattgacct	gaacccaaac	acgggaatcg	tgatccaaaa	420
atgcaggatt	gctgagacca	acgatctccg	atcagtgaag	agcagtttcc	caacgtacct	480
cggtcgtcca	tggaaggagt	actcgaggac	agtgattatg	caatcatcga	tctcggacgt	540
aatcgacccg	gtgggttggc	acgagtggag	tgggacc			577

<210> 426

<211> 283

<212> DNA

<213> Eucalyptus grandis

<400> 426

aaagaccggg	gtgtacagag	agaacgtgca	ggtgccgaag	aagaagacca	acctgacttt	60
catcggcgac	gggcggacca	ccaccatcat	caccggcgac	cggagcgtga	agggcggctt	120
caccaccttc	gagtcgcgca	ctgtcgcggg	gcttggcgag	cgattcttgg	ccaaaaacat	180
aaccttccag	aacaccgccc	gcccttcaaa	ccaccaggcc	gttgccctcc	gtgttggtgc	240
cgatctatct	gccatttacg	aatgcgacat	cctcgcctac	cag		283

<210> 427

<211> 345

<212> DNA

<213> Eucalyptus grandis

<400> 427

ccaccgtcgg	agtgccttggc	gacggattca	tggcaaccgg	gctcacgata	cagaacaccg	60
cgggtccaga	cgcccaccag	gcggtggcat	tccggtcggg	cagcgatttc	tcggtcatcg	120
agaactgcga	gttcctggga	aaccaggaca	cgctctatgc	ccacgccctc	cggcagttact	180
acaagtcctg	ccacatcgag	ggcaatgtgg	acttcatctt	tgggaactcg	gcctcctact	240
tccaggactg	ccagatcctg	gtccgcccc	ggcaggtcaa	gcccagagaag	ggcgagagca	300
atgctgtcac	agcccatggc	cggaccgacc	ccgcgcagtc	gacag		345

<210> 428

<211> 478

<212> DNA

<213> Eucalyptus grandis

<400> 428

tgagcagttc	actcacaaat	tacatcacct	gcttggacgg	tttcgaaggc	tcgtcatcag	60
ctaaatcttc	gatcaagcct	attctcagcg	acttgatata	gagggcaaga	acttctctag	120
ccatatttgt	ttctacttca	tctcctgaag	gacgaagacc	agatgttctg	gagtccttga	180
tcggtgattt	cccatcatgg	gtcacacgaa	aagatcatcg	tctcctgcaa	tctctggtga	240
acgcagttaa	tgccgacgtg	gtggtggcga	aggacggaac	tgggaagtgc	aagacagtga	300
aagaggcgat	cgcagctgct	cctagcaaag	cccagaccgg	gtacgttatt	tatgtgaaga	360
aaggcacata	caaggagaat	gtggaggtgg	caaagacaaa	gacaaacatc	atgcttgttg	420
gcgacggcat	ggattcaact	gtgatcactg	gcagcctcaa	cgtcattgac	ggtgcgac	478

<210> 429

<211> 335

<212> DNA

<213> Eucalyptus grandis

<400> 429

tttttttttt	tttttttttt	taatcnccaa	acattccaaa	ttattgaatt	cacaacacaa	60
cttacagaaa	ctccccaga	aagaaaggac	caatactcat	ttttcacagc	ccttcagtgt	120

aagacactcc	agtggacttc	aaccaagtcc	ctccctgaat	cagctcggcc	acggngaact	180
tcttcgcctc	tgctgggctg	gtgatgacat	gataacctgg	ccacttcacc	cgcttgctcg	240
ttcccgcgcc	tggtcccttg	ttcatgtact	ccccgtagta	canagtcttg	agggcatgat	300
cgccgctcca	caccgaccac	cctgtgggat	caatg			335

<210> 430

<211> 361

<212> DNA

<213> Eucalyptus grandis

<400> 430

tttttttttt	tttttttttt	taatctccaa	acattccaaa	ttattgaatt	cacaacacaa	60
cttacagaaa	ctccccaga	aagaaaggac	caatactcat	ttttcacagc	ccttcagtgt	120
aagacactcc	agtggacttc	aaccaagtcc	ctccctgaat	cagctcggcc	acggngaact	180
tcttcgcctc	tgctgggctg	gtgatgacat	gataacctgg	ccacttcacc	cgcttgctcg	240
ttcccgcgcc	tggtcccttg	ttcatgtact	ccccgtagta	cagagtcttg	agggcatgat	300
cgccgctcca	caccgaccac	cctgtgggat	caatgtgatc	accaatgttt	gattgcatca	360
c						361

<210> 431

<211> 368

<212> DNA

<213> Eucalyptus grandis

<400> 431

tttttttttt	ttttttacga	tcaaattctcc	aaacattcca	aattattgaa	ttcacaacac	60
aacttacaga	aactccccca	gaaagaaagg	accaatactc	atttttcaca	gcccttcagt	120
gtaagacact	ccagtggact	tcaaccaagt	ccctccctga	atcagctcgg	ccacggtgaa	180
cttcttcgcc	tctgtggggc	tggtgatgac	atgataacct	ggccacttca	cccgtttgct	240
cgttcccgcg	cctggtccct	tgttcatgta	ctccccgtag	tacagagtct	tgagggcatg	300
atcgccgctc	cacaccgacc	accctgtggg	atcaatgtga	tcaccaatgt	ttgattgcat	360
cccacagt						368

<210> 432

<211> 324

<212> DNA

<213> Eucalyptus grandis

<400> 432

cccaaccaga	acaccggcat	ttcgatccat	gcttgccaga	tcgtcgccgc	tccagatctc	60
gaggcatcta	aaggaagcat	cccgaactac	ctcgggcggc	catggaagat	gtactcgagg	120
gttgtgtaca	tggtgtccta	catgggcgat	cacattcacc	ccgaaggggtg	gctggagtgg	180
aacggagact	ttgcgctaga	cactttgtat	tacggagagt	acatgaacga	tgggcctggg	240
gcagccgtcg	gcctacgtgt	gaaatggcct	ggtttccgag	tcatcacatc	cacaacagag	300
gcaaacaaat	tcacagtcgc	gcag				324

<210> 433

<211> 460

<212> DNA

<213> Eucalyptus grandis

<400> 433

gcccgcgggc	ggcggcggcg	agtatccaga	gtggctaggg	gagagagaga	gggagctgct	60
ggacatgccg	gcggcggagg	tacaggcgga	catagtgggtg	gcgaaggacg	gagcgagcgg	120
gacgtacaag	acgattgcgg	aggcgataaa	gaaggcgccg	gagagcagtg	gccggaggat	180
catcatctac	gtgcgagccg	ggaggtagca	ggaggataac	ttgaagggtg	ggaagaagaa	240
gacgaacctc	atgttcatcg	gcgatgggaa	gggcagaacg	gtcataacgg	gcggcaaaag	300

tgtagccgac	aagatgacca	cgttccacac	cgctccttc	ggtaaatttc	tgtgctcata	360
tccgaatttc	taatgttcaa	actctcgact	aagctaggcc	aaaaattata	aataatcttt	420
tttgtctaaa	taatttattt	tttacgaaac	aaatcgaacc			460

<210> 434
 <211> 344
 <212> DNA
 <213> Eucalyptus grandis

<400> 434						
aggacggaac	tgggaagttc	aagacagtga	aagaggcgat	cgcagctgct	cctagcaaag	60
cccagacccg	gtacgttatt	tatgtgaaga	aaggcacata	caaggagaat	gtggaggtgg	120
caaagacaaa	gacaaacatc	atgcttggtg	gcgacggcat	ggattcaact	gtgatcactg	180
gcagcctcaa	cgctattgac	ggtgcgacaa	cattcaattc	cgcaactggt	gctgtgaatg	240
gcgatgggtt	catagcccag	gacatatggt	tccagaacac	tgccggggccg	cagaaacacc	300
aggccgtcgc	actccgtgtc	agtgcagaca	agtcagtcac	caac		344

<210> 435
 <211> 295
 <212> DNA
 <213> Pinus radiata

<400> 435						
acgagctcga	gacatgacct	tcgagaacac	ggaaggaccc	gcgaacacca	ggcgggtggcc	60
ctgcgtgtgg	gatcagatct	ctcggctttc	tatcgctgca	gcttcaaggg	ttaccaggac	120
accctttacg	cccattccct	tcgtcagttt	tacagagaat	gcaacatcta	tggcaccgta	180
gatttcatct	tcggcaactc	cgccgtcgtt	tttcaggatt	gcaatttgct	ggcgcgggaga	240
cccctggaga	atcagacgat	tctttacacc	gctcagggca	ggcaggaccc	caatg	295

<210> 436
 <211> 332
 <212> DNA
 <213> Pinus radiata

<400> 436						
tgcaggtatt	tgttgacagt	gacatgagct	ttatgaacag	tgcagggcct	gacaagcatc	60
aagctgtggc	tctacgggtg	ggggccgatt	ttgcagcgat	ttatcgatgc	agtattattg	120
gttaccaaga	cacactttat	gttcaactct	tgaggcagtt	ttacagagaa	tgtgacgtgt	180
tcggaacagt	ggacttcatt	tttgccaatg	cagccgtggt	tttacaggag	tgtaacattt	240
atgctcgaca	aggcatgccc	aatcaagtga	atgtaatcac	tgcccaagga	aggaatcatc	300
cttatcaaaa	taccggcatc	tcaatacata	at			332

<210> 437
 <211> 301
 <212> DNA
 <213> Pinus radiata

<400> 437						
gcggcccccag	agaaaagtgg	taagagatat	gtgatcaagg	tgaagaaggg	aacgtttacaa	60
ggagaacgtg	gaggtgggta	aaacgaagac	taatatcatg	ttgattggag	aaggcatgga	120
ggccacaatc	gttacaggga	gcagaaatgt	gatagacgga	tccaccactt	tcaattcagc	180
cacattcgct	gctgtaggga	agggattttat	ggcacaagac	atggcggttcg	tcaacacagc	240
aggcccgagc	aaacatcagg	cggtggctct	tcgagtaggt	cagatcaatc	agtgttatat	300
c						301

<210> 438
 <211> 242

<212> DNA

<213> Pinus radiata

<400> 438

gaagaaggga acgtacaagg agaacgtgga ggtgggtaaa acgaagacta atatcatgtt	60
gattggagaa ggcattggagg ccacaatcgt tacagggagc agaaatgtga tagacggatc	120
caccactttc aattcagcca cattcgctgc tgtaggggaag ggatttatgg cacaagacat	180
ggcgttcgtc aacacagcag gcccggacaa acatcaggcg gtggctcttc gagtaggatac	240
ag	242

<210> 439

<211> 255

<212> DNA

<213> Pinus radiata

<400> 439

acttaactcc ggtggaaggt aaccatgaat ctcttcaat gaattttgag actgtaaactg	60
aactggcctc gcttgagcta ttaatcactc gataccccgc ccatttgacc cgatttgtag	120
tgcccgacc agggccgcgg ttcattgtatt ccccatagta taggggtgctg agagcgaagg	180
atccattcca ttcagaccaa ccggcaggtt gaatcaggct gccagaaaag gactgcatga	240
agacagtgcg agagt	255

<210> 440

<211> 362

<212> DNA

<213> Pinus radiata

<400> 440

gtggactgca gccatgaatc tccttgtatg aattctccaa cagttaaactt gctcgctctc	60
tgagaacttg tgattaccgc ataccggcc catttcacgc ggtagcagt tgctgctcct	120
gggcctgtat tcatgtattc tccataatac aaagtttgca atgcaaaact tccattccat	180
tccagccagc ccgcaggctg aataacatcg tctagatagg actgcatgta aaccgttcgg	240
gaatactcct tccacggcct cccagatat gttgggaatg agcttttcac cggaacaagg	300
tcggaatcgg gagtgatctt gcagttgtga atggaagttc ctgtgttctg gttcggatca	360
gt	362

<210> 441

<211> 286

<212> DNA

<213> Pinus radiata

<400> 441

aagaaaacta atatcatgtt cgttgagat ggtatggatg tcacagtggg gaccggaaac	60
cgaaatgtga aggacaattt cacaacctt cgttctgcaa ctgttgctgt gactggaaat	120
ggattcatcg ctgcgacat gaccttcgag aacacggcag gaccgcgaa gcaccaggcg	180
gtggccctgc gtgtgggatc agatctttcg gctttctatc gatgcagctt caagggttac	240
caggacacc tttacgcca ttccttcgt caagttttta cagaga	286

<210> 442

<211> 302

<212> DNA

<213> Pinus radiata

<400> 442

ggagaagagc cagacgagat acgtaattca tataaaagca ggagtttatg cagagaatgt	60
ggagttgcac aagaagaaaa ctaatatcat gttcgttgga gatggatgg atgtcacagt	120
ggtgaccgga aaccgaaatg tgaaggacaa tttcacacc tttcgttctg caactggtgc	180

tgtgactgga	aatggattca	tcgctcgcga	catgaccttc	gagaacacgg	caggacccgc	240
gaagcaccag	gcggtggccc	tgcgtgtggg	atcagatctt	tcggctttct	atcgatgcag	300
ct						302

<210> 443
 <211> 466
 <212> DNA
 <213> Pinus radiata

<400> 443						
gaaatcgtga	gaattccacc	gagcaagacg	aatctcatgt	ttgttggaga	tggcatggat	60
cgaactatcg	tcaccggatc	attgtctgcc	cagattcccg	gcgtcggcac	acacggctct	120
gcaactgtcg	gggtgaacgc	ggacggtttt	gttgcgcgag	acattgcgtt	cgagaatact	180
gcggggccgg	agatgcatca	ggctgttgcc	ctcagagtcg	atagcgatct	ctcagcattc	240
gagaggtgcg	cctttctcgg	acaccaggac	accctatacg	cgcacgccct	ccgccagttt	300
tatcgggaatt	gcaggatcga	aggcaacgtc	gacttcatat	ttggaaacgc	agcggccatc	360
ttccacaact	gctccattct	cgtccgccct	cgccagggtg	cgtctaattct	ttccgaagcg	420
aaccccataa	ctgcccacgg	gcgattggat	cggggtcaga	ctactg		466

<210> 444
 <211> 345
 <212> DNA
 <213> Pinus radiata

<400> 444						
ggatacacta	caaaaacgat	agaaaaagaa	atacagacac	tacagacaca	gacgaacttc	60
aaaaattgaa	agcgaactac	agacacagac	gaacttcttc	aaaagtttgg	cgaagtcgct	120
aattttatcaa	tccgtcgatg	tagtcgatgc	cagtggactg	caaccaggaa	tttccttgta	180
tgaattctcc	cactgtaaat	ttgctcgcc	cttgagaact	tttgatcacc	cgatacccag	240
gccatttcac	acgggtttcca	gtagcggagc	ctggccctgt	attcatatat	tctccataat	300
acaaagtgtt	caaagcaaaa	gctccatccc	attccagcca	gccc		345

<210> 445
 <211> 183
 <212> DNA
 <213> Pinus radiata

<400> 445						
acgcgcattc	nccgcgccaa	ttctacaggg	agtgtaacat	tttgggcact	gtagatttca	60
tattttgggaa	tgccgcagtg	gtgtttcaga	gctgcaatct	gatgcccg	aaaccgggtg	120
caaatacagaa	aaatgccatc	acagcacagg	gcagaactga	tccgaaccaa	aacacaggaa	180
ctt						183

<210> 446
 <211> 264
 <212> DNA
 <213> Pinus radiata

<400> 446						
acgtgcaat	cttgcagcga	tataacaccg	attgatctga	tcctactcga	agagccaccg	60
cctgatgttt	gtccgggcct	gctgtgttga	cgaacgccat	gtcttgtgcc	ataaatccct	120
tcctacagc	agcgaatgtg	gctgaattga	aagtgggtgga	tccgtctatc	acattttctgc	180
tcctgtaac	gattgtggcc	tccatgcctt	ctccaatcaa	catgatatta	gtcttctttt	240
taccacctc	cacgttctcc	ttgt				264

<210> 447
 <211> 417

<212> DNA

<213> Pinus radiata

<400> 447

agagaatgca	acatctatgg	caccgtagat	gttgcatctt	ctgtaaaact	gacgaagggga	60
atgggcgtat	aggggtgtcct	ggtaaccctt	gaagctgcaa	cgatagaaag	ccgagagatc	120
tgatcccaca	cgcagggccca	ccgcctgggt	cttcgcgggt	cctgccgtgt	tctcgaaggt	180
catgtcgcga	gcgatgaatc	catttccagt	cacagcaaca	gttgcagaac	gaaaggttgt	240
gaaattgtcc	ttcacatttc	ggtttccggt	caccactgtg	acatccatac	catctccaac	300
gaacatgata	ttagttttct	tcttggtgcaa	ctccacattc	tctgcataaa	ctcctgcttt	360
tatatgaatt	acgtatctcg	tctgggtctt	ctccggagcc	ttctccactg	cctctgt	417

<210> 448

<211> 404

<212> DNA

<213> Pinus radiata

<400> 448

attatatctc	agctgacata	aatatatatt	aaaaattaca	gcatacaatg	gaactttgac	60
tgcagagcag	agaaaagaaa	gcccttaatt	tattggccac	ctggcttgca	atattctatt	120
gcatttttaga	gtacagcaga	ataatataca	cgtcagcctt	aatttcagaa	aaataaataa	180
actacgtgag	cagccctcca	ataaaaaaga	tcccagtgga	tggcaaccat	ttagcaccag	240
agatgaactg	ggccaccgtg	aatggataaa	cttcctgcgc	cgctttgaaa	atcctgtaac	300
caggccacgt	caccgcctc	gcaagccctg	cgccggggcc	actgttcata	tattccccat	360
aaaataaggt	atccagtgcg	aagtctccga	accactccaa	ccat		404

<210> 449

<211> 173

<212> DNA

<213> Pinus radiata

<400> 449

gcctcgctgg	agctcttaat	cgctcgatat	cctggccatt	tgacccggcc	tgcagtgttt	60
gcgccagggc	cgcggttcat	gtattcccca	taatagaggg	tactcagtgc	gaagggtcca	120
ttccattcga	gccaaaccgc	tggtgaatc	atgtcgccaa	gaaacgattg	cat	173

<210> 450

<211> 398

<212> DNA

<213> Pinus radiata

<400> 450

ggctctgaga	gtaggagcgg	attttgcagc	cttttaccgt	tgcagcgtea	tcggttacca	60
ggacacactg	tacgtacatt	ctctccgccca	attttacaga	gaatgcgaca	tctacggcac	120
agtggacttc	atctttggca	acgcagccgt	ggtgttgcag	aagtgcacca	tgttcgccag	180
aaaacccttg	cccaactcca	agatcacggt	gacggctcag	ggcaggaagg	accccaacca	240
gaacaccggc	atctccatcc	acgactgcag	agtgacggcg	gcggcggtatc	ttgctcccgt	300
caagggcctc	tatcgcgctt	acctcgggag	gccctggaaa	ttatactctc	gcacgggtata	360
cctgcaaaact	tttttggatg	atattattga	ccctgcgcg			398

<210> 451

<211> 404

<212> DNA

<213> Pinus radiata

<400> 451

agagaatgca	acatctatgg	caccgtagat	gttgcatctt	ctgtaaaact	gacgaagggga	60
------------	------------	------------	------------	------------	-------------	----

atgggcgat	agggtgtcct	ggtaaccctt	gaagctgcaa	cgatagaaag	ccgagagatc	120
tgatcccaca	cgcagggcca	ccgcctgggt	cttcgcgggt	cctgccgtgt	tctcgaaggt	180
catgtcgcga	gcgatgaatc	catttccagt	cacagcaaca	gttgcagaac	gaaaggttgt	240
gaaattgtcc	ttcacatttc	ggtttccggt	caccactgtg	acatccatac	catctccaac	300
gaacatgata	ttagttttct	tcttgtgcaa	ctccacattc	tctgcataaa	ctcctgcttt	360
tatatgaatt	acgtatctcg	tctggctctt	ctccggagcc	ttct		404

<210> 452

<211> 394

<212> DNA

<213> Pinus radiata

<400> 452

agagaatgca	acatctatgg	caccgtagat	gttgcattct	ctgtaaaact	gacgaaggga	60
atgggcgat	agggtgtcct	ggtaaccctt	gaagctgcaa	cgatagaaag	ccgagagatc	120
tgatcccaca	cgcagggcca	ccgcctgggt	cttcgcgggt	cctgccgtgt	tctcgaaggt	180
catgtcgcga	gcgatgaatc	catttccagt	cacagcaaca	gttgcagaac	gaaaggttgt	240
gaaattgtcc	ttcacatttc	ggtttccggt	caccactgtg	acatccatac	catctccaac	300
gaacatgata	ttagttttct	tcttgtgcaa	ctccacattc	tctgcataaa	ctcctgcttt	360
tatatgaatt	acgtatctcg	tctggctctt	ctcc			394

<210> 453

<211> 428

<212> DNA

<213> Pinus radiata

<400> 453

attatatctc	agctgacata	aatatatatt	aaaaattaca	gcatacaatg	gaactttgac	60
tgcagagcag	agaaaaagaaa	gcccttaatt	tattggccac	ctggcttgca	atattctatt	120
gcattttaga	gtacagcaga	ataatataca	cgtcagcctt	aatttcagaa	aaataaataa	180
actacgtgag	cagccctcca	ataaaaaacga	tcccagtgga	tggcaaccat	ttagcaccag	240
agatgaactg	ggccaccgtg	aatggataaa	cttcctgcgc	cgctttgaaa	atcctgtaac	300
caggccacgt	caccgcctc	gcaagccctg	cgccggggcc	actgttcata	tattcccat	360
aaaataaggt	atccagtgcg	aagtctccga	accctccaac	catccggcag	ggtcaataat	420
atcatcct						428

<210> 454

<211> 329

<212> DNA

<213> Pinus radiata

<400> 454

gcaaactcaga	aaaatgcaat	caccgcacag	ggcagaactg	atccgaacca	gaacacagga	60
acttccattc	acaactgcaa	gatcactccc	gatgccgacc	ttgttccggt	gaaaagctca	120
ttcccaacat	atctggggag	gccgtggaag	gagtattccc	gaacggttta	catgcagtcc	180
tatctagacg	atgttattca	gcctgcgggc	tggctggaat	ggaatggaag	ttttgcattg	240
caaactttgt	attatggaga	atacatgaat	acaggcccag	gagcagcaac	tgctaaccgc	300
gtgaaatggg	ccgggtatcg	ggtaatcac				329

<210> 455

<211> 358

<212> DNA

<213> Pinus radiata

<400> 455

ctacgatcct	ctccaaacaa	cgtagtgcca	aacgtgatcg	tggctaagga	tggctctgga	60
aatttcaaaa	cgatttcaca	agccatagct	gcggccccag	agaaaagtgg	taagagatat	120

gtgatcaagg	tgaagaaggg	aacgtacaag	gagaacgtgg	aggtgggtaa	aacgaagact	180
aatatcatgt	tgattggaga	aggcatggag	gccacaatcg	ttacagggag	cagaaatgtg	240
atagacggat	ccaccacttt	caattcagcc	acattcgtcg	ctgtagggaa	gggatttatg	300
gcacaagaca	tggcggttcgt	caacacagca	ggccccggaca	aacatcaggc	ggtggctc	358

<210> 456

<211> 195

<212> DNA

<213> Pinus radiata

<400> 456

cgtggaggtg	ggtaaaacga	agactaatat	catgttgatt	ggagaaggca	tggaggccac	60
aatcggtaca	gggagcagaa	atgtgataga	cggatccacc	actttcaatt	cagccacatt	120
cgctgctgta	gggaagggat	ttatggcaca	agacatggcg	ttcgtcaaca	cagcaggccc	180
ggacaaacat	caggc					195

<210> 457

<211> 405

<212> DNA

<213> Pinus radiata

<400> 457

ttcgcggccg	cgtcgacgta	attctctggc	aatagcaaag	ctggcgcagg	agtcagtaat	60
gcccgatcca	tctcccagaga	tacgcctccc	gtccgattcc	atcaaggatg	attttccttc	120
atggctatct	gcaggagatc	ggaggctcct	acgatcctct	ccaaacaacg	tagtgccaaa	180
cgtgatcgtg	gctaaggatg	gctctggaaa	tttcaaaacg	atttcacaag	ccatagctgc	240
ggccccagag	aaaagtggta	agagatatgt	gatcaagggtg	aagaagggaa	cgtacaagga	300
gaacgtggag	gtgggtaaaa	cgaagactaa	tatcatgttg	attggagaag	gcatggaggc	360
cacaatcggt	acagggagca	gaaatgtgat	agacggatcc	accac		405

<210> 458

<211> 326

<212> DNA

<213> Pinus radiata

<400> 458

cgtggaacat	ggatggccta	caagacactc	gacagcaaac	gaaacatagt	caaaacatta	60
gcgaagcgac	gtcactagtc	tgtaaatccg	tccacataat	cgacaccggt	ggactgcagc	120
catgaatctc	cttgatgaa	ttctccaaca	gtaaacttgc	tcgcctcttg	agaacttgtg	180
attacccgat	acccggccca	tttcacgcgg	ttagcagttg	ctgctcctgg	gcctgtattc	240
atgtattctc	cataatacaa	agtttgcaat	gcaaaacttc	cattccattc	cagccagccc	300
gcaggctgaa	taacatcgtc	tagata				326

<210> 459

<211> 360

<212> DNA

<213> Pinus radiata

<400> 459

tcgacctacg	atcctctcca	aacaacgtag	tgccaaacgt	gatcgtggct	aaggatggct	60
ctggaaatth	caaaacgatt	tcacaagcca	tagctgcggc	cccagagaaa	agtggttaaga	120
gatatgtgat	caagggtgaag	aagggaacgt	acaaggagaa	cgtggaggtg	ggtaaaacga	180
agactaatat	catgttgatt	ggagaaggca	tggaggccac	aatcggttaca	gggagcagaa	240
tgtgatagac	ggatcnccac	tttcaattca	gccacattcg	ctgctgtagg	gaagggattt	300
atggcacaag	acatggcggt	cgtcaacaca	gcaggccccg	acaaacatca	ggcgggtggct	360

<210> 460

<211> 438
 <212> DNA
 <213> Pinus radiata

<400> 460
 cgtggaacat ggatggccta caagacactc gacagcaaac gaaacatagt caaaacatta 60
 gcgaagcgac gtcactagtc tgtaaatccg tccacataat cgacaccggg ggactgcagc 120
 catgaatctc cttgtatgaa ttctccaaca gtaaacttgc tcgcctcttg agaacttgtg 180
 attacccgat acccggccca ttccacgcgg ttagcagttg ctgctcctgg gcctgtattc 240
 atgtattctc cataatacaa agtttgcaat gcaaaacttc cattccattc cagccagccc 300
 gcaggctgaa taacatcgtc tagataggac tgcagtgtaa ccgttcggga atactccttc 360
 cacggcctcc ccagatatgt tgggaatgag cttttcaccg gaacaaggtc ggcatcggga 420
 gtgatcttgc agttgtga 438

<210> 461
 <211> 380
 <212> DNA
 <213> Pinus radiata

<400> 461
 agagaatgca acatctatgg caccgtagat gttgcattct ctgtaaaact gacgaaggga 60
 atgggcgtat aggggtgtcct ggtaaccctt gaagctgcaa cgatagaaag ccgagagatc 120
 tgatcccaca cgcagggcca ccgcctggtg cttcgcggtt cctgccgtgt tctcgaagggt 180
 catgtcgcga gcatgaatc catttccagt cacagcaaca gttgcagaac gaaagggtgt 240
 gaaattgtcc ttcacatttc ggtttccggg caccactgtg acatccatac catctccaac 300
 gaacatgata ttaagttttc ttcttggtgca actccacatt ctctgcataa actcctgctt 360
 tatatgaata cgtatctcgt 380

<210> 462
 <211> 439
 <212> DNA
 <213> Pinus radiata

<400> 462
 agagaatgca acatctatgg caccgtagat gttgcattct ctgtaaaact gacgaaggga 60
 atgggcgtat aggggtgtcct ggtaaccctt gaagctgcaa cgatagaaag ccgagagatc 120
 tgatcccaca cgcagggcca ccgcctggtg cttcgcggtt cctgccgtgt tctcgaagggt 180
 catgtcgcga gcatgaatc catttccagt cacagcaaca gttgcagaac gaaagggtgt 240
 gaaattgtcc ttcacatttc ggtttccggg caccactgtg acatccatac catctccaac 300
 gaacatgata ttagttttct tcttggtgcaa ctccacattc tctgcataaa ctctgctttt 360
 tatatgaatt acgtatctcg tctggctctt ctccggagcc ttctccactg cctctgtaat 420
 gttcgtgtaa ttccactg 439

<210> 463
 <211> 441
 <212> DNA
 <213> Pinus radiata

<400> 463
 gtgaacatac cttccaccaa ggccttcata acgctggaag gagacggcgc agactccacc 60
 attatacaat ggtccgacac ggctgggact cccggaccca acggtaaagc gttgggtaca 120
 tataacagcg ctactgttgc agtcaattcg ctttacttca tcgccagaaa cattacgttt 180
 canaacacag ccccggttcc tctgccgggg gcggtgggca gacaagcagt ggccttgaga 240
 atcacgggag acacgtcgtc cttcttcggg tgcagcttct tgggcgcgca ggacactttg 300
 tatgaccacg ctggccgcca ttatttcaaa gactgttata tcgaaggctc cgtcgatttc 360
 atcttcggga acggcctctc cctctacgag ggggtgcagcc tgcattgggat ttccgatacc 420
 tacggcgcgg tgacagcgca g 441

<210> 464
 <211> 481
 <212> DNA
 <213> Pinus radiata

<400> 464
 tgatccctga cattactgtg tcaaagctgg atcagaaatc ctctctatca agcattcagc 60
 aagctgtgaa cagtgcgccg gactactcgg aaaagaaatt tgtgatcaag atacaggccg 120
 ggggtttacgg ggaaacgggt cgaatcccc gcagtaagac gaatctcgtg tttgtgggcg 180
 ccggtatgga taaaacgggt atcaccgggt ctgcatatgt gccgtctctg cccggccccg 240
 tcacaattta cgatgtcgcc acggttggag tgaatgggga cggcttcata gcccgtagaca 300
 taacattccg aaacacattt cagggggcac agactcatca agccgtggcc ctgagagtag 360
 acagcgattt ttctgccttc tacagctgcg ctttcgagag ccaccaggac acgctctaca 420
 cgcacacgct ccgccaattc tacagaaatt gcagaataga gggcaccac gacttcatct 480
 t 481

<210> 465
 <211> 505
 <212> DNA
 <213> Pinus radiata

<400> 465
 gcaattctct ggccatgttc cagatcttgt tctgcaacac cacaaaatct gacattgggtg 60
 cccttcaggg tcatgattat catgtacaga caaacaactt tacagtcca tcgtctctc 120
 caacaaaaag gcgacgcctt ttggcagagg caggggaaga aatgaacaat gctcttcgga 180
 atcaagaatt ttatgaccat tatggattga ttcattggagg ggcgcagcat gaatttcctc 240
 ggtgggttatc ttcccagat cgcaggcttt tgaactgcc cgttgctgcc atgcaacctg 300
 atgctgttgt ggccttggat ggaaagtggca agtataagag catagtgtat gctgtcaacg 360
 atgcaccttc cctgctaagc agcagaagggt atatcatcta tgtgaaaaca ggcgtgtata 420
 acgaaaatgt cagcatttca aggaagaaga ccaatctcat gattgttggt gatggcattg 480
 gaaaaactat tgtagcagca ggcaa 505

<210> 466
 <211> 361
 <212> DNA
 <213> Pinus radiata

<400> 466
 cggagggtcc tacgtcctt tccaaacgac atcgtggctg acgtgatcgt ggctcaggat 60
 ggctctggaa aattcaaaac aattacagaa gccatagctg cggccccgga gaaaagctct 120
 aagagatacg tgatcaagggt gaagaagggg acgtacaagg agaactgga agtgggcaaa 180
 aagaagacaa atattatgct gatcgganaa ggcattggaag ccacgatcgt tacagggagc 240
 agaaatgttg tagacggttc caccactttc aattcctcta cactagctgc ttaggggaag 300
 gggtttatgg cacaagacat ggcgttcgtc aacaccgcag gtccagataa gcatcaagcg 360
 g 361

<210> 467
 <211> 402
 <212> DNA
 <213> Pinus radiata

<400> 467
 cccccgagct acgctcccc ttcgattcca tcaaggatga ttttccttca tggctatctg 60
 caggagatcg gaggctocta cgctcctttc caaacgacat cgtggctgac gtgatcgtgg 120
 ctccaggatgg ctctggaaaa ttcaaaacaa ttacagaagc catagctgcg gccccggaga 180
 aaagctctaa gagatacgtg atcaagggtga agaaggggac gtacaaggag aacgtggaag 240

tgggcaaaaa	gaagacaaat	attatgctga	tccgagaagg	catggaagcc	acgatcggtta	300
cagggagcag	aaatggttga	gacgggtcca	ccactttcaa	ttcctctaca	ctagctgctg	360
tagggaaggg	gtttatggca	caagacatgg	cgttcgtcaa	ca		402

<210> 468
 <211> 397
 <212> DNA
 <213> Pinus radiata

<400> 468						
tgatccctga	cattactgtg	tcaaagctgg	atcagaaatc	ctctctatca	agcattcagc	60
aagctgtgaa	cagtgcgccg	gactactcgg	aaaagaaatt	tgtgatcaag	atacaggccg	120
gggtttacgg	ggaaacgggt	cgaatcccc	gcagtaagac	gaatctcgtg	tttgtgggcg	180
ccggtatgga	taaaacgggt	atcacccggt	ctgcatatgt	gccgtctctg	cccggccccg	240
tcacaattta	cgatgtcgcc	acggttggag	tgaatgggga	cggcttcata	gcccgtgaca	300
taacattccg	aaacacattt	cagggggccac	agactcatca	agccgtggcc	ctgagagtag	360
acagcgattt	ttctgccttc	tacagctgcg	ctttcga			397

<210> 469
 <211> 349
 <212> DNA
 <213> Pinus radiata

<400> 469						
gcaggaccgc	cgaagcacca	ggcgggtggc	ctgcgtgtgg	gatcagatct	ctnggctttc	60
tatcngtgca	gcttcaagg	ttaccaggac	accctatacg	cccattccct	tcgtcagttt	120
tacagagaat	gcaacatcta	tggcaccgta	natttcatct	tcggcaactc	cggcgtcgtt	180
tttcaggatt	gcaatttget	ggcgcggaga	cccctggaga	atcagaagat	tctttacacc	240
gctcacggca	ggcaggacc	caatgagaac	actggaattt	ccattcagaa	ctgtaatgtg	300
accgcagccc	cagacctggc	tccagtgaag	agctcgttcg	atgcatatc		349

<210> 470
 <211> 375
 <212> DNA
 <213> Pinus radiata

<400> 470						
cggaggctcc	tacgtctctt	tccaaacgac	atcgtggctg	acgtgatcgt	ggctcaggat	60
ggctctggaa	aattcaaaac	aattacagaa	gccatagctg	cggccccgga	gaaaagctct	120
aagagatacg	tgatcaagg	gaagaagggg	acgtacaagg	agaacgtgga	agtgggcaaa	180
aagaagacaa	atattatgct	gatcggagaa	ggcatggaag	ccacgatcgt	tacagggagc	240
agaaatgttg	tagacggttc	caccactttc	aattcctcta	cactagetgc	tgtaggggag	300
gggtttatgg	cacaagacat	ggcgttcgtc	aacaccgcag	gtccagataa	gcatcaagcg	360
gtggctcttc	gtgta					375

<210> 471
 <211> 367
 <212> DNA
 <213> Pinus radiata

<400> 471						
tgatccctga	cattactgtg	tcaaagctgg	atcagaaatc	ctctctatca	agcattcagc	60
aagctgtgaa	cagtgcgccg	gactactcgg	aaaagaaatt	tgtgatcaag	atacaggccg	120
gggtttacgg	ggaaacgggt	cgaatcccc	gcagtaagac	gaatctcgtg	tttgtgggcg	180
ccggtatgga	taaaacgggt	atcacccggt	ctgcatatgt	gccgtctctg	cccggccccg	240
tcacaattta	cgatgtcgcc	acggttggag	tgaatgggga	cggcttcata	gcccgtgaca	300
taacattccg	aaacacattt	cagggggccac	agactcatca	agccgtggcc	ctgagagtag	360

acagcgga

367

<210> 472
 <211> 446
 <212> DNA
 <213> Pinus radiata

<400> 472

cggaggctcc	tacgtcctt	tccaaacgac	atcgtggctg	acgtgatcgt	ggctcaggat	60
ggctctggaa	aattcaaaac	aattacagaa	gccatagctg	cggccccgga	gaaaagctct	120
aagagatacg	tgatcaagg	gaagaagggg	acgtacaagg	agaacgtgga	agtgggcaaa	180
aagaagacaa	atattatgct	gatcggagaa	ggcatggaag	ccacgatcgt	tacagggagc	240
anaaatgttg	tagacggttc	caccactttc	aattcctcta	cactagctgc	tgtagggaag	300
gggtttatgg	cacaagacat	ggcgttcgtn	aacaccgcag	gtccagataa	gcatcaagcg	360
gtggctcttc	gtgtaggatc	agaccaatca	gtgttatatc	gctgcaagat	tgcagcgtac	420
caagacacat	tgtacgcgca	ttctct				446

<210> 473
 <211> 345
 <212> DNA
 <213> Pinus radiata

<400> 473

ggcgcagact	ccaccattat	acaatggctc	gacacggctg	ggactccccg	acccaacggg	60
aaagcgttgg	gtacatataa	cagcgtact	gttgacgtca	attcgcctta	cttcacgcgc	120
agaaacatta	cgtttcagaa	cacagccccg	gttcctctgc	cgggggagg	gggcagacaa	180
gcagtggcct	tgagaatcac	gggagacacg	tcgtccttct	tcgggtgcag	cttcttgggc	240
gcgcaggaca	ctttgtatga	ccacgctggc	cgccattatt	tcaaagactg	ttatatcgaa	300
ggctccgtcg	atttcattct	cgggaacggc	ctctccctct	acgag		345

<210> 474
 <211> 268
 <212> DNA
 <213> Pinus radiata

<400> 474

aactaatatc	atgttcggtg	gagatgggat	ggatgtcaca	gtggtgaccg	gaaaccgaaa	60
tgtgaaggac	aatttcacaa	cctttcggtc	tgcgactgtt	gctgtgactg	gaaacggatt	120
catcgctcgc	gacatgacct	tcgagaacac	ggcaggaccc	gcgaagcacc	aggcgggtggc	180
cctgcgtgtg	ggatcagatc	tctcggtttt	ctatcgatgc	agcttcaagg	gttaccagga	240
caccctttac	gcccattccc	ttcgtcag				268

<210> 475
 <211> 316
 <212> DNA
 <213> Pinus radiata

<400> 475

gccagacgag	atacgtaatt	catataaaaag	caggagttta	tgcagagaat	gtggagtgtc	60
acaagaagaa	aactaatatc	atgttcggtg	gagatgggat	ggatgtcaca	gtggtgaccg	120
gaaaccgaaa	tgtgaaggac	aatttcacaa	cctttcggtc	tgcgactgtt	gctgtgactg	180
gaaacggatt	catcgctcgc	gacatgacct	tcgagaacac	ggcaggaccc	gcgaagcacc	240
aggcgggtggc	cctgcgtgtg	ggatcagatc	tctcggtttt	ctatcgatgc	agcttcaagg	300
gttaccagga	caccct					316

<210> 476
 <211> 440

<212> DNA

<213> Pinus radiata

<400> 476

cgagaatagc	cagacgagat	acataattca	tataaaaagca	ggagtttatg	cagagaatgt	60
ggagttgcac	ccgacgaaaa	caaatatcat	gttcattgga	gatggcatgg	atgttacagt	120
ggtgaccgga	aaccgaaatg	tgaaggacaa	atttacaacc	tatcgttctg	caactgttgc	180
tgtgactgga	aacggattca	tcgctcgca	catgaccttc	gagaacacgg	caggaccac	240
gaagcaccag	gcggtggccc	tgcgtgtggg	atcagatctc	tcggccttct	ataagtgcaa	300
cttcaagggt	taccaggaca	ccctttacgc	ccattccttt	cgtcagttct	acagaaaatg	360
caacatctat	ggcaccatag	atttcacatt	cggcaactcc	gccgtcgttt	ttcaggattg	420
caatctcctg	gcgcggaggc					440

<210> 477

<211> 357

<212> DNA

<213> Pinus radiata

<400> 477

gaaacctgag	acgtacttaa	ctccggtgga	aggtaaccat	gaatctcctt	caatgaattt	60
tgagactgta	aatgactggc	ctcgcttgag	ctattaatca	ctcgataccc	cgccccattg	120
acccgatttg	tagtgcccgc	accagggccg	cggttcattg	attccccata	gtacagggtg	180
ctgagagcga	aggatccatt	ccattcgagc	caaccggcag	ggtgaatcag	gtcgcccaga	240
aaggactgca	tgaagacagt	gcgagagtag	tctttccatg	gcctcccaag	atatgcctcg	300
aacgagctct	tactggagc	caggtctggg	gctgcggtca	cattacagtt	ctgaatg	357

<210> 478

<211> 318

<212> DNA

<213> Pinus radiata

<400> 478

cagaactgca	ctgtgaccgc	cgccctcggac	ctggttccag	tgaaaacatc	gttcgaggcg	60
taccttggca	ggccgtggag	aaattactcg	cgcactgtgt	tcatgaaatc	ttatctctac	120
gacttgattc	agccagcggg	ttggttggaa	tggaaatggc	gcttcgctct	gagcactctg	180
tactacgggg	aatacatgaa	cagcggcccc	ggcgcgggca	ctgccaatcg	ggtcagatgg	240
gcgggggtatc	aggtgattaa	gaaatccaag	gaggccaaga	aatttacagt	gtctcaattc	300
attgaaggca	attcatgg					318

<210> 479

<211> 271

<212> DNA

<213> Eucalyptus grandis

<400> 479

gaaattcttt	ggtaacttga	tggatgctgg	attatgctcg	gtttgtggag	aggaaagttt	60
tggaaactggc	tctgatcata	ttcgtgagaa	agatgggata	tgggctgtgc	ttgcttggtt	120
atctattctc	gcttacaaaa	ataaggagaa	cttaagtggg	gaaaagcttg	tatctgtcga	180
ngacattgtc	cgtcagcatt	ggngacata	tggctgctcat	tattatacca	gatatgatta	240
tgagaatgtt	gattcaggag	cagcaaagga	a			271

<210> 480

<211> 301

<212> DNA

<213> Eucalyptus grandis

<400> 480

gatgctggat	tatgctcggc	ttgtggagag	gaaagtcttg	gaactggctc	tgatcatatt	60
cgtcaganag	atgggatatg	ggctgtgctt	gcctgggtat	ctattctcgc	ttacaaaaat	120
aaggagaact	taagtggaga	aaagcttgta	tctgtcgagg	acattgtccg	tcagcattgg	180
gtgacatatg	gtcgtcatta	ttataaccaga	tatgattatg	agaatgttga	ttcaggagca	240
gcaaaggaac	tgatgggata	cttgggtccaa	ctgcaatcat	ctctctctga	agtcaaccag	300
a						301

<210> 481

<211> 287

<212> DNA

<213> Eucalyptus grandis

<400> 481

aaattctttg	gtaacttgaa	tggatgctgg	attatgctcg	gtttgtggag	aggaaagttt	60
tggaaactggc	tctgatcata	ttcgtgagac	agatgggata	tgggctgtgc	ttgcttggtt	120
atctattctc	gcttacaaaa	ataaggagaa	cttaagtggg	gaaaagcttg	tatctgtcga	180
ggacattgtc	cgtcagcatt	gggtgacata	tggctcgtcat	tattatacca	gatatgatta	240
tgagaatgtt	gattcaggag	cagcaaagga	actgatggga	tacttgg		287

<210> 482

<211> 285

<212> DNA

<213> Eucalyptus grandis

<400> 482

gaccatatac	gtgaaaaaga	tggatatctgg	gctgttttgg	catggctttc	catccttgcg	60
tacaagaaca	aggaaaatat	caatgggtgga	aagcttgtat	cagttgaaga	tattgttcgc	120
cagcactggg	caacttatgg	tcgccactat	tacactcgtt	atgattatga	gaatgttgac	180
gcagggggcag	caaaggaact	aatggcatac	ttgggtccgtt	tgcaatcttc	cctcgggtgaa	240
gttaatgaga	ttgtcaaggg	agtatgttcg	gatgtgtcaa	atgtt		285

<210> 483

<211> 427

<212> DNA

<213> Eucalyptus grandis

<400> 483

cgttcgtgcg	ctgatatttt	ctctctccgg	tttccctggc	cggcggaagc	gaatcggcag	60
aaaatgggtga	cgttccaggt	gtcgcgagtg	gagaccgcgc	ccttcgatgg	ccagaagccc	120
ggcacctccg	gcctccgcaa	gaaggtgaaa	gtttttgtcc	agccccatta	cttgcaaaaat	180
tttgtgcaat	caacattcta	tgccctttca	gctgagaaa	tccaaggagc	tacactcgtt	240
gtttctgggtg	atgggcgtta	tttctctaag	gatgctatcc	agatcataat	aaagatgtca	300
gctgcaaatg	gagtaaggcg	tgtctgggta	ggtcagaatg	gattactttc	cactcctgcc	360
gtgtcagctg	tgatccgtga	aagagttggg	catgatggtc	caaggcacag	gagcatttat	420
tctgcac						427

<210> 484

<211> 408

<212> DNA

<213> Eucalyptus grandis

<400> 484

aaaaaactgt	catctcgcct	tgctcacttc	ctcaccacct	ttcctggcac	catcatcgac	60
atcctccctg	tttatgaaaa	tggtgacgtt	ccaggtgtcg	cgagtggaga	ccgcgccctt	120
cgatggccag	aagcccggca	cctccggcct	ccgcaagaag	gtgaaagttt	ttgtccagcc	180
ccattacttg	caaaattttg	tgcaatcaac	attctatgcc	ctttcagctg	agaaagtcca	240
aggagctaca	ctcgttggtt	tggtgatggg	cgttatttct	ctaaggatgc	tatccagatc	300

ataataaaga	tgtcagctgc	aaatggagta	aggcgtgtct	gggtaggtca	gaatggatta	360
ctttccactc	ctgccgtgtc	agctgtgatc	cgtgaaagag	ttgggcat		408

<210> 485

<211> 243

<212> DNA

<213> Eucalyptus grandis

<400> 485

gttgaagcca	taccctactt	ttctggcggt	ctcaagggag	ttgccaagaa	catgcctaca	60
tcagctgccc	ttgatgtggt	tgctcaacat	ctaaatctga	agttttttga	ggtgcctaca	120
gggtggaaaat	tctttggtaa	cttgatggat	gctggattat	gctcggtttg	tgagagaggaa	180
agttttggaa	ctggctctga	tcatattcgt	gagaaagatg	ggatatgggc	tgtgcttgct	240
tgg						243

<210> 486

<211> 372

<212> DNA

<213> Eucalyptus grandis

<400> 486

ccggaggtaa	gcgaantcgg	acagaaatgg	tgcacgttcc	aggtgtacgc	gagtggagac	60
cgcgaccctt	acgatggcca	gaagcccggc	acctccggcc	tccgcaagaa	ggtggaaagt	120
ttttgtccag	ccccattact	tgcaaaatct	tgtgcaatca	acattttatg	ccctttcagc	180
tgagaaaagtc	caaggagcta	cactcgttgt	ttctgggtgat	gggcgttatt	tctctaagga	240
tgctatccag	atcataataa	agatgtcagc	tgcaaatgga	gtaaggcgtg	tctgggtagg	300
tcagaatgga	ttactttcca	ctcctgccgt	gtcagctgtg	atccgtgaaa	gagttgggca	360
tgatggatcc	aa					372

<210> 487

<211> 511

<212> DNA

<213> Eucalyptus grandis

<400> 487

gcaccatcat	cgacatcctc	cctgtttctg	cgaatcggca	gaaaatgggtg	acgttccagg	60
tgctcgcgagt	ggagaccgog	cccttcgatg	gccagaagcc	cggcacctcc	ggcctccgca	120
agaagttgaa	agtttttgtc	cagccccatt	acttgccaaa	atttggtgca	ntcaacattt	180
tatgcccttt	cagctgagaa	agtccaagga	gctacactcg	ttgtttctgg	tgatgggcgt	240
tattttctcta	aggatgctat	ccagatcata	ataaagatgt	cagctgcaaa	tgagtaagg	300
cgtgtctggg	taggtcagaa	tggattactt	tccactcctg	ccgtgtcagc	tgtgatccgt	360
gaaagagttg	ggcatgatgg	atccaaggct	acaggagcat	ttattctgac	ggcaagtcac	420
aatcccgggtg	gtcccccata	ggattttgga	atcaagtata	acatggaaaa	tggtggacct	480
gctcctgagg	cgatcactga	taagatgtat	g			511

<210> 488

<211> 465

<212> DNA

<213> Eucalyptus grandis

<400> 488

gcaccatcat	tngacatcct	ccctgtttct	gcgaatcggc	agaaaatgggt	gacgttccag	60
gtgtcgcgag	tggagaccgc	gcccttcgat	ggccagaagc	ccggcacctc	cggcctccgc	120
aagaagttga	aagtttttgt	ccagccccat	tacttgcaaa	attttgtgca	atcaacattt	180
tatgcccttt	cagctgagaa	agtccaagga	gctacactcg	ttgtttctgg	tgatgggcgt	240
tattttctcta	aggatgctat	ccagatcata	ataaagatgt	cagctgcaaa	tgagtaagg	300
cgtgtctggg	taggtcagaa	tggattactt	tccactcctg	ccgtgtcagc	tgtgatccgt	360

gaaagagttg ggcgatgatg atccaaggct acaggagcat ttattctgac ggcaagtcac 420
aatccccgtg gtccccatga ggatttttga atcaagtata acatg 465

<210> 489
<211> 514
<212> DNA
<213> Eucalyptus grandis

<400> 489
ctggcaccat catcgatc ctcctgttt ctgcgaatcg gcagaaaatg gtgacgttcc 60
aggtgtcgcg agtggagacc gcgcccttcg atggccagaa gcccggcacc tccggcctcc 120
gcaagaaggt gaaagttttt gtccagcccc attacttgca aaattttgtg caatcaacat 180
tttatgccct ttcagctgag aaagtccaag gagctacact cgttgtttct ggtgatgggc 240
gttattttct taaggatgct atccagatca taataaagat gtcagctgca aatggagtaa 300
ggcgtgtctg ggtaggtcag aatggattac tttccactcc tgccgtgtca gctgtgatcc 360
gtgaaagagt tgggcatgat ggatccaagg ctacaggagc atttattctg acggcaagtc 420
ataatccccg tgggtcccat gaggattttg gaatcaagta taacatggaa aatgggtggac 480
ctgctcctga ggcgatcact gataagatgt atga 514

<210> 490
<211> 442
<212> DNA
<213> Eucalyptus grandis

<400> 490
ctgatatttt tctctctccg gtttccctgg ccggcggaag cgaatcggca gaaaatggtg 60
acgttccagg tgtcgcgagt ggagaccgcg cccttcgatg gccagaagcc cggcacctcc 120
ggcctccgca agaaggtgaa agtttttgtc cagccccatt acttgcaaaa ttttgtgcaa 180
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ggagtaaggc gtgtctgggt aggtcagaat ggattacttt ccactcctgc cgtgtcagct 360
gtgatccgtg aaagagttgg gcatgatgga tccaaggcta caggagcatt tattctgacg 420
gcaagtcata atccccgtgg tc 442

<210> 491
<211> 520
<212> DNA
<213> Eucalyptus grandis

<400> 491
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acgttccagg tgtcgcgagt ggagaccgcg cccttcgatg gccagaagcc cggcacctcc 120
ggcctccgca agaaggtgaa agtttttgtc cagccccatt acttgcaaaa ttttgtgcaa 180
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ggagtaaggc gtgtctgggt aggtcagaat ggattacttt ccactcctgc cgtgtcagct 360
gtgatccgtg aaagagttgg gcatgatgga tccaaggcta caggagcatt tattctgacg 420
gcaagtcata atccccgtgg tccccatgag gatttttgaa tcaagtataa catggaaaat 480
ggtggacctg ctcttgaggc gatcactgat aagatgtatg 520

<210> 492
<211> 418
<212> DNA
<213> Eucalyptus grandis

<400> 492
ctgatatttt tctctctccg gtttccctgg ccggcggaag cgaatcggca gaaaatggtg 60

acgttccagg	tgctcgaggt	ggagaccgag	cccttcgatg	gccagaagcc	cggcacctcc	120
ggcctccgca	agaagggtgaa	agtttttgtc	cagccccatt	acttgcaaaa	ttttgtgcaa	180
tcaacatttt	atgccctttc	agctgagaaa	gtccaaggag	ctacactcgt	tgtttctggg	240
gatgggcgtt	atttctctaa	ggatgctatc	cagatcataa	taaagatgtc	agctgcaaat	300
ggagtaaggc	gtgtctgggt	aggtcagaat	ggattacttt	ccactcctgc	cgtgtcagct	360
gtgatccgtg	aaagagttgg	gcatgatgga	tccaaggcta	caggagcatt	tattctga	418

<210> 493

<211> 424

<212> DNA

<213> *Eucalyptus grandis*

<400> 493

gagaacttat	tgtaaagat	aatagagaga	tcaagatgag	cctctcatga	agtcacccat	60
atgaaacaaa	catgtgaaag	gtctagcagg	gttgccaact	gtttagagaa	atctctcata	120
ttcgtctgag	ctgctcttcc	tgctatttag	ttagcaagcc	catcatgtga	tgaccgtggg	180
agcagatcgg	ccagtaaata	cctccatctt	ggagagcttg	agtgcgacat	tcaccagagg	240
agctaaagct	tcttgagaat	ctctcccagt	tttcaaggga	tccttctcat	attgctcaat	300
gtaaaagcga	atggttgccc	cttctgagcc	ggttcccagag	agacggaaaa	tnaggcgcca	360
cccatcttca	aacnaataac	gaataccctg	gtgcttcgat	atggaaccat	caacaggatc	420
tttg						424

<210> 494

<211> 257

<212> DNA

<213> *Eucalyptus grandis*

<400> 494

gttctttgtt	actccatcag	attctgttgc	tattattgct	gcaaagtctg	ttgaagcaat	60
accctacttc	tccggaggct	taaaggagg	tgccaggagc	atgccaacat	cagctgcctt	120
ggatgttgtt	gctaaacatt	taaatttgaa	gttttttgag	gttccaacgg	gctggaaatt	180
ctttggtaac	ttaatggatg	ctggattatg	ttcagtttgt	ggggaagaaa	gtttcggaac	240
tgggtcagac	catatac					257

<210> 495

<211> 483

<212> DNA

<213> *Eucalyptus grandis*

<400> 495

ggtaaaaatc	ttactgtggc	gaaagcgga	tctatgtgat	cacggttggg	gcagatcgcc	60
cggtaaattc	ctgcattttt	gaaagcttga	gagcaacttc	cacaagagga	gccaatgctt	120
cctgagaatc	tctcccagtt	tttgctggat	ccttctcata	ctgctctatg	taaagacgaa	180
tggttgccac	ttccgagcct	gttcccagga	ggcgaaaaac	aagtcgtgac	ccatcttcga	240
acaaatatcg	aataccctgg	tgcttagaaa	tggaaccatc	aacaggatcc	ttatattcaa	300
attcatcagc	atgaacaaca	tttgatgcat	caggacaaac	ccccttgaca	atctgggtga	360
cttcagagag	agaagattgc	agttggacca	agtatcccat	cagttccttt	gctgctcctg	420
aatcaacatt	ctcataatca	tatctgggtat	aataatgacg	accatattgtc	acccaatgct	480
gac						483

<210> 496

<211> 353

<212> DNA

<213> *Eucalyptus grandis*

<400> 496

tgacaatctg	gttgacttca	gagagagaag	attgcagttg	gaccaagtat	cccatcagtt	60
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cctttgctgc	tcctgaatca	acatttctcat	aatcatatct	ggtataataa	tgacgaccat	120
atgtcgccca	atgctgacgg	acaatgtcct	caacagatac	aagcttttct	ccacttaagt	180
tctccttatt	tttgtaagcg	agaatagata	accaagcaag	cacagcccat	atcccatctt	240
tctcacgaat	atgatcagag	ccagttccaa	aactttcctc	tccacaaacc	gagataatcc	300
agcatccatc	aagttaccaa	agaattttcca	ccctgtaggc	acctcaaaaa	act	353

<210> 497

<211> 442

<212> DNA

<213> Eucalyptus grandis

<400> 497

gccaaccgca	tattttgtaga	agagcttggt	gcacaagaga	gctcattatt	gaactgcaca	60
cctaaggagg	attttggagg	gggtcaccca	gatccaaatt	tgacatatgc	aaaggagctg	120
gtggcacgga	tgggtttggg	caagtcaagt	cctcancatg	agcccccaa	atttggtgct	180
gctgctgatg	gtgatgctga	tcgtaatatg	gttctcggaa	aaaggttctt	tgttactcca	240
tcagattctg	ttgctattat	tgctgcaa	gctgttgaag	caatacccta	cttctccgga	300
ggcttaaagg	gagttgccag	gagcatgcaa	catcagctgc	cttggtatgt	gttgctaaac	360
atttaaat	gaagttttt	gaggttccaa	cgggctggaa	attctttggt	aacttaatgg	420
atgctggatt	atgttcagtt	tg				442

<210> 498

<211> 364

<212> DNA

<213> Eucalyptus grandis

<400> 498

gccaaccgca	tattttgtaga	agagcttggt	gcacaagaga	gctcattatt	gaactgcaca	60
cctaaggagg	attttggagg	gggtcaccca	gatccaaatt	tgacatatgc	aaaggagctg	120
gtggcacgga	tgggtttggg	caagtcaagt	cctcagcatg	agccaccaga	atttggtgct	180
gctgctgatg	gtgatgctga	tcgtaatatg	gttctcggaa	aaaggttctt	tgttactcca	240
tcagattctg	ttgctattat	tgctgcaa	gctgttgaag	caatacccta	cttctccgga	300
ggcttaaagg	gagttgccag	gagcatgcca	acatcagctg	ccttggtatgt	tgttgctaaa	360
catt						364

<210> 499

<211> 365

<212> DNA

<213> Eucalyptus grandis

<400> 499

ccgtgtcagc	tgtgatccgt	gaaagagttg	ggcatgatgg	atccaaggct	acaggagcat	60
ttattctgac	ggcaagtcac	aatcccgggtg	gtcccatga	ggattttgga	atcaagtata	120
acatggaaaa	tgggtggacct	gctcctgagg	cgatcactga	taagatgtat	gaaaatacaa	180
aaacaataaaa	agaatatcta	attgcagaaa	atctccctca	tgtggatatt	gctgcaattg	240
gtgtcacaaag	ctttacgggg	ccagaggggtc	aattcgatgt	tgaggttttt	gattcagcca	300
gtgactatgt	taaattaatg	aagtcaattt	ttgacttcca	ggcgatccga	aagctgcttt	360
catct						365

<210> 500

<211> 390

<212> DNA

<213> Eucalyptus grandis

<400> 500

ggctacagga	gcattttattc	tgacggcaag	tcataatccc	ggtgggtccc	atgaggattt	60
tggaatcaag	tataacatgg	aaaatgggtg	acctgtcct	gaggcgatca	ctgataagat	120

gtatgaaaat	acaaaaacaa	taaaagaata	tctaattgca	gaaaatctcc	ctgatgtgga	180
tattgctgca	attggtgtca	caagctttac	ggggccagag	ggccaattcg	atgttgaggt	240
ttttgattca	gccagtgaact	atgttaaatt	aatgaagtca	atttttgact	tccaggcgat	300
ccgaaagctg	ctttcatctc	caaattttac	cttctgctat	gatgctctcc	atggagttgc	360
tggagcatat	gccaaccgca	tatttgtaga				390

<210> 501

<211> 341

<212> DNA

<213> Eucalyptus grandis

<400> 501

ggtagggtcag	aatggattac	tttccactcc	tgccgtgtca	gctgtgatcc	gtgaaagagt	60
tgggcatgat	ggatccaacg	ctacaggagc	atattattctg	acggcaagtc	ataatcccgg	120
tgggtcccat	gaggattttg	gaatcaagta	taacatggaa	aatggtggac	ctgctcctga	180
ggcgatcact	gataagatgt	atgaaaatac	aaaaacaata	aaagaatatc	taattgcaga	240
aaatctccct	gatgtggata	ttgctgcaat	tggtgtcaca	agctttacgg	ggccagaggg	300
tcaattcgat	gttgagggtt	ttgattcagc	cagtgaactat	g		341

<210> 502

<211> 600

<212> DNA

<213> Eucalyptus grandis

<400> 502

gctaaaagaa	aaaacaaata	aataaaaaaa	gaaataatth	tgcagacaaa	atthgaaaaa	60
actgtcatct	cgcttctgtc	agttccccac	cacctttcct	ggcaccatca	tgcacatcct	120
ccctgtttct	gaaaatgggtg	acgttccagg	tgctgcgagt	ggagaccgag	cccttcgatg	180
gccagaagcc	cggcacctcc	ggcctccgca	agaagggtgaa	agttttttgtc	cagccccatt	240
acttgcaaaa	ttttgtgcaa	tcaacatttt	atgccctttc	agctgagaaa	gtccaaggag	300
ctacactcgt	tgtttctggg	gatgggcgtt	atthctctaa	ggatgctatc	cagatcataa	360
taaagatgtc	agctgcaaat	ggagtaaggc	gtgtctgggt	aggtcagaat	ggattacttt	420
ccactcctgc	cgtgtcagct	gtgatccgtg	aaagagttgg	gcatgatgta	agctatcttt	480
ttctctttgg	tggcatccaa	ttgtataacc	ctttgactat	gcaatcacia	tgcagcaata	540
ttatctggat	atgaagtgtc	ctctaacaaa	atagctacac	aatctatcat	cagggatcca	600

<210> 503

<211> 360

<212> DNA

<213> Eucalyptus grandis

<400> 503

gcaaaaactgt	ttacatgagg	ggtcggtaaa	aatcttactg	tggcgaaagc	gggatctatg	60
tgatcacggt	tggggcagat	cgcccggtaa	atthctgcat	ttttgaaagc	ttgagagcaa	120
cttccacaag	aggagccaat	gcttcttgag	aatctctccc	agttttttgct	ggatccttct	180
catactgctc	tatgtaaaga	cgaatgggtg	caccttccga	gcctgttccc	gagaggcgaa	240
aaacaagtcg	tgacccatct	tcgaacaaat	atcgaatacc	ctgggtgctta	gaaatggaac	300
catcaacagg	atccttatat	tcaaattcat	cagcatgaac	aacatttgat	gcatcaggac	360

<210> 504

<211> 395

<212> DNA

<213> Pinus radiata

<400> 504

gttcttggca	agaggttttt	tgtgactcca	tcagattctg	ttgccatcat	tgcagcaaat	60
gcagttgaag	ccattccata	cttcagctct	ggattgaaag	gtgttgcaag	aagcatgccg	120

acatcagctg	cacttgatgt	agttgcaaaa	agtcttaatc	ttagggtttt	cgaggtgccc	180
actggctgga	agtttttttg	aaattttaatg	gatgctggaa	tgtgttctgt	ttgtggtgaa	240
gagagtttcg	gcactgggtc	cgaccatata	cgagagaagg	atggaatctg	ggcagtttta	300
gcatggcttt	caattctagc	ttacaaaaat	aaggataacc	ttgatggcgg	gaagcttgtc	360
actgtagagg	acatagtccg	taaccattgg	gcttc			395

<210> 505

<211> 477

<212> DNA

<213> Pinus radiata

<400> 505

tccatctcca	ctacaaccac	tatcatgacc	cgcttcaaca	tccaagaggt	ttctaccaag	60
ccctacgagg	gccagaagcc	tggtagctcc	gggctgcgaa	agagggtgaa	ggtgttccag	120
caagagcact	ataccgagaa	cttcgtccaa	gctatcctcg	atgcgatgcc	tggacctggt	180
gtcaacggct	caaccctcgt	tgtcggaggt	gacggtcgat	accactccga	gcctaccgtg	240
caatcgatcc	tcaagatcgc	ggcgcgaaac	ggcgtgaaga	agctatacat	tggcaaagac	300
gcaatccttt	cgaccccggc	cgcctcgaa	atcattcgcc	agtacaaggc	cgatgggtgg	360
atcctgctga	ccgccagtca	caaccctggt	ggaccggaca	atgactttgg	tatcaagtac	420
aacatcaaca	acgggtgggc	ggccccagag	agcgttaccg	acaagatctt	cgagcgc	477

<210> 506

<211> 436

<212> DNA

<213> Pinus radiata

<400> 506

tggaaacaga	accatcaacc	ggatctttgt	attcaaattc	atcggcatcc	acgacaccag	60
aaacatctgg	cctcacttcc	ttaattaatt	tgttaacttc	ggggagagaa	gactgcagct	120
taattaaatg	tgacatgagc	tccttggcag	cacctgcata	aacattttca	tagtcatagc	180
gtgtataata	gtggcgacca	taagaagccc	aatggttacg	gactatgtcc	tctacagtga	240
caagcttccc	gccatcaagg	ttatccttat	ttttgtaagc	tagaattgaa	agccatgcta	300
aaactgccc	gattccatcc	ttctctcgga	tatggtcgga	accagtgcg	aaactctctt	360
caccacaaac	agaacacatt	ccagcatcca	ttaaatttcc	aaaaaacttc	cagccagtgg	420
gcacctcgaa	aaacct					436

<210> 507

<211> 473

<212> DNA

<213> Eucalyptus grandis

<400> 507

tgataatgaa	gggaagattc	ttagagtgg	gttgataatg	aaagaggggtg	tgaagtattt	60
caacccggtg	tacctgtttg	acgagggctc	gaccatctct	tggatcccgt	gtggaagaaa	120
gctcacttgc	tcttaccg	gcatcaagtt	cacttatggc	ccggagagtt	acttcgggca	180
cgaggtgtct	gtgttgagga	tggatgggca	atttgacaga	ctagatgagc	tcacttatgt	240
ggaaagccat	ttgagcaacc	tctccacaaa	attctatgg	gaagtcaccc	agcagatgct	300
gaagcactcc	gaattccccg	gaagcaacaa	tggcactgg	ctcttccaga	ccatagttgg	360
gctaaaaatc	agagacctct	atgagcaaat	cacagccagc	aaagcagctg	caccattaca	420
aggcactaaa	gcttaggact	tccatatact	agttccccct	cttctttctc	aat	473

<210> 508

<211> 379

<212> DNA

<213> Eucalyptus grandis

<400> 508

gctcatcaag	cctcccaaga	tcctgggtcat	tgaggggactt	cacccaatgt	tcgaccagcg	60
cgttagggac	ttgctggact	tcagcatata	tttggacatc	agcaatgagg	tcaaatttgc	120
atggaaaatc	cagagggaca	tggccgagcg	aggacacagt	ctcgagagca	tcaaagctag	180
cattgaagcc	cgaaagccag	attttgaagc	ctatatagac	ccacagaagc	agtatgcaga	240
tgcagtgatt	gaagtgtgc	caacacagct	aatccctggg	gataatgaag	ggaagattct	300
tagagtggag	ttgataatga	aagaggggtgt	gaagtatttc	aaccgggtat	acctgtttga	360
cgagggctcg	accatctct					379

<210> 509

<211> 459

<212> DNA

<213> Eucalyptus grandis

<400> 509

aaagaaaana	accncagagg	agcaggccct	taatcgtacc	ctccgacacc	cgactttctc	60
tctctaccta	accgttaaga	ctcccgttaag	gacacaattc	agagcgagaa	agaagagaga	120
gaaagctcgc	gtgcgataga	gagagagaga	gagagagaga	tgtcgaccgc	ctcgggtttgc	180
tcctcgacgc	tccagtcgca	gacggcgccg	ctcgagctcc	ggcgggtcttc	cctccggcg	240
ccgagcaacg	tcgctttcac	caggaagatc	cagacgggtg	tgaaggcatc	ttcacgagtt	300
gacaaattct	ccaaaagtga	tatcattgta	tctccatcaa	ttctatctgc	taatttttgc	360
aagctgggag	atcaggtgaa	agctgtggag	ttggcaggat	gtgattggat	ccacgttgat	420
gtaatggatg	gccgttttgt	tcccaatatt	acaatcggg			459

<210> 510

<211> 268

<212> DNA

<213> Eucalyptus grandis

<400> 510

tcaccaggaa	gatccagacg	gtggtgaagg	catcttcacg	agttgacaaa	ttctccaaaa	60
gtgatatcat	tgtatctcca	tcaattctat	ctgctaattt	ttcgaagctg	ggagatcagt	120
aatccagggtg	aaagctgtgg	agttggcagg	atgtgattgg	atccangttg	atgtaatgga	180
tggccgtttt	gttcccaata	ttacaatcgg	tccccttgtg	gttggtgccc	tgcgccttgc	240
aacagatctt	cctctggatg	ttcatctg				268

<210> 511

<211> 293

<212> DNA

<213> Eucalyptus grandis

<400> 511

gnaaaaaaga	gagatgtcga	ccgcctcgct	ttgctcctcg	acgctccagt	cgcagattcg	60
gcggcctcga	gctccggcga	tcttcccttc	gccggccgag	caacgtcgct	ttcaccagga	120
agatccagac	ggtgggtgaag	gcatcttcac	gagttgacaa	attctccaaa	agtgatatca	180
ttgtatctcc	atcaattcta	tctgctaatt	tttcgaagct	gggagatcag	gtgaaagctg	240
tggagttggc	aggatgtgat	tggatccacg	ttgatgtaat	ggatggccgt	ttt	293

<210> 512

<211> 423

<212> DNA

<213> Eucalyptus grandis

<400> 512

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aatattacaa	tcggtcccct	tgtggttggg	gccctgcgcc	ctgtaacaga	tcttccctctg	120
gatgttcac	tgatgattgt	ggaacctgaa	cagcgagtac	cggatttcat	caaggctgga	180
gctgacatag	tcagtgtgca	ttgtgaacaa	acttctacca	tccacttgca	tcgcacggtc	240

aaccaaataca	aaagtctggg	agctaaagct	ggagttgtcc	tgaaccctgc	tacccccacta	300
actgctatag	aatatgttct	tgatgtgggt	gatctgggtg	tgatcatgtc	ggngaaccct	360
ggctttgggtg	ggcaaagctt	tatcgagagc	caagtgcaga	aaatatcaga	cttgagaagg	420
atg						423

<210> 513
 <211> 508
 <212> DNA
 <213> Pinus radiata

<400> 513						
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ccagtgcagca	attgagggat	cactgaaaat	ggaaggggaa	acagagaagg	gggttatccc	120
taaaattgcc	ccgtcaatgt	tgtcatcaga	ctttgcgaat	ctggcttcag	aggcgaaata	180
tatgacggaa	aatgggtgcag	attgggttgca	tatggacatc	atggatgggc	atttcgttcc	240
aaatcttacc	attggagcac	ctgtgattca	gagtttgagg	aagcataccc	aggcattctt	300
ggattgtcat	cttatgggtca	caaaccctct	tgattatgtg	gagccatttg	caaaagctgg	360
agcttcaggg	ttcacttttc	atgtggaggc	tgccaaagac	aattggcaag	atctcatcaa	420
aagaatcaga	aatgctggca	tgcggcctgg	agtggcagtg	aaacctggaa	cttctataga	480
aaactgttta	tccctttggg	ggaaagtg				508

<210> 514
 <211> 502
 <212> DNA
 <213> Pinus radiata

<400> 514						
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ccagtgcagca	attgagggat	cactgaaaat	ggaaggggaa	acagagaagg	gggttatccc	120
taaaattgcc	ccgtcaatgt	tgtcatcaga	ctttgcgaat	ctggcttcag	aggcgaaata	180
tatgacggaa	aatgggtgcag	attgggttgca	tatggacatc	atggatgggc	atttcgttcc	240
aaatcttacc	attggagcac	ctgtgattca	gagtttgagg	aagcataccc	aggcattctt	300
ggattgtcat	cttatgggtca	caaaccctct	tgattatgtg	gagccatttg	caaaagctgg	360
agcttcaggg	ttcacttttc	atgtggaggc	tgccaaagac	aattggcaag	atctcatcaa	420
aagaatcaga	aatgctggca	tgcggcctgg	agtggagtga	aacctggaac	ttctatagaa	480
actgttatcc	tttgggtggaa	gt				502

<210> 515
 <211> 447
 <212> DNA
 <213> Pinus radiata

<400> 515						
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catgtcaaca	gcagcgatat	caatatgcgc	cacggtcgct	atgggtgggtt	ctcagagcac	120
ccattctatg	ggtgtctgcc	gtagtccgtt	ctgggggaaag	aagcataaca	tggtctttgc	180
aggcccccaa	ttggcgaaact	cttcaaggaa	agttctctct	acagtgaagg	catcttccc	240
agtagacaag	ttctccaaaa	ctgacatcat	tgtctctcct	tctattcttt	ctgcaaat	300
tgcaacatta	ggtgaccagg	tcaaagctgt	ggagttggca	ggttgcgatt	gggttcatgt	360
tgatgtcatg	gatgggcgtt	ttgtgccaaa	tattaccatt	ggacctctgg	tggtggctgc	420
attacgaccc	gtaacagatt	tgccact				447

<210> 516
 <211> 403
 <212> DNA
 <213> Pinus radiata

<400> 516

tgcatttcga	gtttaccaag	atatcccgtc	acatttttta	aatttcattt	tgttgcccttg	60
aggtctagag	atcgattctt	aggcatgtca	acagcagcga	tatcaatatg	cgccacggtc	120
gctatgggtg	gttctcagag	cacccattct	atgggtgtct	gccgtagacc	gttctgggga	180
aagaagcata	acatggcctt	tgcaggcccc	caattggcga	actcttcaag	gaaagttctc	240
tctacagtga	aggcatcttc	ccgagtagac	aagttctcca	aaactgacat	cattgtctct	300
ccttctattc	tttctgcaaa	ttttgcaaca	ttaggtgacc	agggtcaaagc	tgtggagttg	360
gcagggtg	attgggttca	tggtgatgtc	atggatgggc	cgt		403

<210> 517

<211> 379

<212> DNA

<213> Pinus radiata

<400> 517

attctatggg	tgtctgccgt	agtccgttct	ggggaaagaa	gcataacatg	gcctttgcag	60
gcccccaatt	ggcgaactct	tcaaggaaag	ttctctctac	agtgaaggca	tcttcccag	120
tagacaagtt	ctccaaaact	gacatcattg	tctctccttc	tattctttct	gcaaattttg	180
caacattagg	tgaccaggtc	aaagctgtgg	agttggcagg	ttgcgattgg	gttcatgttg	240
atgtcatgga	tgggcgtttt	gtgccaaata	ttaccattgg	acctctggtg	gtggctgcat	300
tacgaccgt	aacagatttg	ccactggatg	tacatttgat	gattgttgaa	ccggaacaac	360
gtgtaccaga	ttttatcaa					379

<210> 518

<211> 404

<212> DNA

<213> Pinus radiata

<400> 518

attctatggg	tgtctgccgt	agtccgttct	ggggaaagaa	gcataacatg	gcctttgcag	60
gcccccaatt	ggcgaactct	tcaaggaaag	ttctctctac	agtgaaggca	tcttcccag	120
tagacaagtt	ctccaaaact	gacatcattg	tctctccttc	tattctttct	gcaaattttg	180
caacattagg	tgaccaggtc	aaagctgtgg	agttggcagg	ttgcgattgg	gttcatgttg	240
atgtcatgga	tgggcgtttt	gtgccaaata	ttaccattgg	acctctggtg	gtggctgcat	300
tacgaccgt	aacagatttg	ccactggatg	tacatttgat	gattgttgaa	ccggaacaac	360
gtgtaccaga	ttttatcaag	gctggtgcag	acattgtag	tgtc		404

<210> 519

<211> 705

<212> DNA

<213> Pinus radiata

<400> 519

gaagcaacca	tactctcaag	ttacatcaca	gcagcccacg	ggcccaggaa	ggtcggtggg	60
tttggttaga	cctgtctgaa	caaggtcttt	ggggccagtg	agcaattgag	ggatcactga	120
aatggaagg	caacacagag	aagggggtta	tccctaaaat	tgctccgtca	atgttgtcat	180
cagactttgc	gaatctggct	tcagaggcga	aatatatgac	ggaaaatggg	gcagattggg	240
tgcatatgga	catcatggat	gggcatttct	ttccaaatct	taccattgga	gcacctgtga	300
ttcagagttt	gaggaagcat	accaggcat	tcttggttg	tcattcttatg	gtcacaaacc	360
ctcttgatta	tgtggagcca	tttgcaaaag	ctggagcttc	aggggttact	tttcatgtgg	420
aggctgccaa	agacaattgg	caagatctca	tcaaaagaat	cagaaatgct	ggcatgcggc	480
ctggagtggc	agtgaacct	ggaacttcta	tagaaactgt	tatcctttgg	tggaaagtga	540
agaacctgtg	gaaatgggtg	tagtgatgac	tggtgagcct	gcttttggag	ggcagaaatc	600
atgccagata	tgatggataa	ggtcatgac	tacggcgga	gtatcctacc	cttgatattg	660
aggtgatggc	ggttaagccc	atctacaatt	aaccagcgtc	tgtc		705

<210> 520

<211> 459

<212> DNA

<213> Pinus radiata

<400> 520

attttgaggt	ctgagtgaat	tgatttttga	gtgtattagg	gccagtgagc	aattgagggg	60
tactgaaaa	tggaagggaa	cacagagaag	ggggttatcc	ctaaaattgc	cccgtcaatg	120
ttgtcatcag	actttgcgaa	tctggcttca	gaggcgaaat	atatgacgga	aaatgggtgca	180
gattgggtgc	atatggacat	catggatggg	catttcgttc	caaattcttac	cattggagca	240
cctgtgattc	agagtttgag	gaagcatacc	caggcattct	tggattgtca	tcttatggtc	300
acaaaccctc	ttgattatgt	ggagccattt	gcaaaagctg	gagcttcagg	gttcactttt	360
catgtggagg	ctggcaaaga	caattggcaa	gatctcatca	aaagaatcag	aaatgctggc	420
atgcggcctg	gagtggcagt	gaaacctgga	acttctata			459

<210> 521

<211> 410

<212> DNA

<213> Pinus radiata

<400> 521

gggccagtga	gcaattgagg	gatcactgaa	aatggaaggc	aacacagaga	aggggggttat	60
ccctaaaatt	gccccgtcaa	tgttgtcatc	agactttgcg	aatctggctt	cagaggcgaa	120
atatatgacg	gaaaatggtg	cagattgggt	gcatatggac	atcatggatg	ggcatttcgt	180
tccaaatctt	accattggag	cacctgtgat	tcagagtttg	aggaagcata	cccaggcatt	240
cttggattgt	catcttatgg	tcacaaacct	tcttgattat	gtggagccat	ttgcaaaagc	300
tggagcttca	gggttcactt	ttcatgtgga	ggctgcctaa	gacaattggc	aagatctcat	360
caaaagaatc	agaaatgctg	gcatgcggcc	tggagtggca	gtgaaacctg		410

<210> 522

<211> 286

<212> DNA

<213> Eucalyptus grandis

<400> 522

atgggttcgga	tggccaatct	ctgtgtggtg	tgcagtcatg	ctgttaatgg	tgttgctgag	60
attcacagtg	aaatcgtaaa	gaagggaagt	tttcatgaat	tctttaagtt	atggcctgaa	120
aaattttcaaa	acaaaacaaa	tggggtgaca	ccaagaagat	ggattccttt	ctgcaatcct	180
gagttaagta	agattatnac	tagatggatt	ggcacagaag	actggatcct	ccacacagat	240
aaactagctg	agttgcgtaa	gtttgcagat	aatgaggatc	ttcaga		286

<210> 523

<211> 443

<212> DNA

<213> Eucalyptus grandis

<400> 523

ggtaactctg	gatatggctg	aggagattat	tttcttggtg	gcatgactt	ccccagttat	60
atggaagccc	aagcaagagt	agatgatgcc	tacaaggaca	gaagaggatg	gctcaggatg	120
tccatcttaa	gactgctgg	aagtggcaaa	tttagcagtg	accgaacaat	tgctcagtac	180
gccaaagaaa	tctggaacgt	agaggggtgc	tgtgtaccat	gaaaagcaat	ttgaaactag	240
accgcctttt	agcttccctc	ccttccctcc	tcttccctcc	ttactttata	tattgcgata	300
gaggggcaac	catgctctgt	aatttatgct	tgtaaaacca	gattcattac	acaaatgcac	360
tccgcctaac	tgcggatgag	aaataagcat	ggatgtaatg	atatacagtg	taactttcct	420
ttataaaaaa	aaaaaaaaaa	aaa				443

<210> 524

<211> 265

<212> DNA

<213> *Eucalyptus grandis*

<400> 524

gttaggcatg	acgtgggtttt	ccctgttaga	ttttttggcc	acgtggaggt	tactccaaat	60
ggatcccgaa	aatgggtggg	tggagaggta	ttgcaagctc	tagcatatga	tgtcccaatt	120
cccggataca	agaccaagaa	cactaatagt	cttcgtctct	gggaagcaaa	agcttcttct	180
caggatttca	acctttttcca	attcaatgat	ggacagtatg	aatcagctgg	acagttgcac	240
tctcgagctg	aacaaatttg	tgctg				265

<210> 525

<211> 363

<212> DNA

<213> *Eucalyptus grandis*

<400> 525

ggcaattgtc	cttgtcataa	tatcccatgc	ctcgtcccac	ccaagtcctt	catcgtccat	60
taacagacgc	attaactctg	gaatcgcaag	agtgggatga	gtgtcattca	gctgtactgc	120
aacttttggt	gggaagtcaa	cccactgccg	tgatccttct	ccacctttcc	tctccttgaa	180
cctgaagatt	atatcctgca	gcatgcact	acagagaaaag	aattgttgct	tcagccgtaa	240
aagttttcca	ctctctgttg	catctccagg	atataaaaaca	gcacaaattt	gttcagctcg	300
agagtgcac	tgtccagctg	attcacactg	tccatcattg	aattggaaaa	ggttgaaatc	360
ctg						363

<210> 526

<211> 344

<212> DNA

<213> *Eucalyptus grandis*

<400> 526

ggcaattgac	cttgtcataa	tatcccatgc	ctcgtcccac	ccaagtcctt	catcgtccat	60
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aacttttggt	gggaagtcaa	cccactgccg	agaaccttct	ccacctttcc	tctccttgaa	180
cctgaagatt	atatcctgca	gcatgcact	acagagaaaag	aattgttgct	tcagccgtaa	240
aagttttcca	ctctctgttg	catctccagg	atataaaaaca	gcacaaattt	gttcagctcg	300
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<210> 527

<211> 445

<212> DNA

<213> *Eucalyptus grandis*

<400> 527

cacagtacat	attgcgggtg	acgggtatca	gtatagaccc	aaacagtcta	tttgacattc	60
aagtgaagcg	cattcatgaa	tacaagagac	agctgatgaa	tattctgggc	gtgatctata	120
gatataagaa	acttaaggag	atgagtcctg	aagagaggaa	aaagacaact	tcacgaacag	180
ttatgatcgg	tggaaaaggca	tttgcaacat	atacgaatgc	taaaagaata	gtcaagcttg	240
tgactgatgt	tggtaatggt	gtcaacagtg	atcctgaggt	caacgactac	ttgaaggtta	300
tatttggtcc	aaactacaac	gtctcagtag	cagagattct	cattcctgga	agtgagctat	360
ctcagcacat	cagcactgca	ggaatggagg	cgagtggcac	aagcaatatg	aaatttgcac	420
tgaatggctg	cctcattata	ggaac				445

<210> 528

<211> 529

<212> DNA

<213> *Eucalyptus grandis*

<400> 528

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aagtgaagcg	cattcatgaa	tacaagagac	agctgatgaa	tattctgggc	gtgatctata	120
gatataagaa	acttaaggag	atgagtcctg	aagagaggaa	aaagacaact	tcacgaacag	180
ttatgatcgg	tggaaaggca	tttgcaacat	atacgaatgc	taaaagaata	gtcaagcttg	240
tgactgatgt	tggtaatggt	gtcaacagtg	atcctgaggt	caacgactac	ttgaagggtta	300
tatttggtcc	aaactacaac	gtctcagtag	cagagattct	cattcctgga	agtgaagctat	360
ctcagcacat	cagcactgca	ggaatggagg	cgagtggcac	aagcaatatg	aaatttgcac	420
tgaatggctg	cctcattata	ggaacattgg	atggggccaa	tgtggaaatc	aggggaagaaa	480
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<210> 529

<211> 505

<212> DNA

<213> Pinus radiata

<400> 529

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gggcggtgac	aaatctacat	ggctcaagga	cttgtagaag	cttaagggac	tcctccctta	120
cgcggacaag	ccagacttcc	atgccaaagt	gacggcgcca	aagcagaaga	acaaggagcg	180
tctggcccat	tatgcacgtg	agacgttggg	agtcgagatt	gataccaaga	gtttgtttga	240
tggttcagatc	aagcgtatcc	acgaatataa	acgccaaaacc	atgaacatct	ttggtgtgat	300
ctaccggtac	ctacgtttga	aatcgctcgtc	gcccagaggag	cgcaagaaga	ttcaggccccg	360
aaccacatc	ttcgggtggca	aggctgctcc	cggttactac	atggccaagc	taactattcg	420
gttgatcgctc	aacgtcgcca	aggatgatcaa	caacgatccg	gaagtcaagg	gcttgatgac	480
tattattttc	tgccctgatt	actcg				505

<210> 530

<211> 540

<212> DNA

<213> Pinus radiata

<400> 530

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tgaagcgtac	caggccacag	cacatagtgt	gcgagaccgt	ttaattgaaa	gttggaatga	180
tactcatcag	tatttcaggg	aaaataatcc	aaagcgggtg	tttttctctat	ccctcgagtt	240
tcttatggga	cggtcattat	caaacagcat	ttacaatctt	ggcataaaaag	accaatatgc	300
tgaagctttg	aagcaacttg	gctttgactt	ggaaacactg	gtggagcagg	aaggagatgc	360
agctcttggt	aatggagggc	ttgctcgact	ctcagcatgt	ctgatggact	cacttgcaac	420
tctggactta	ccagcctggg	gatatggatt	gcgttatcag	tatgggttgt	ttaggcaggt	480
gataattgat	gggtttcagc	gtgaacaacc	agattattgg	ctgaattttg	gtaatccttg	540

<210> 531

<211> 398

<212> DNA

<213> Eucalyptus grandis

<400> 531

cgagtaccgc	tcctgggtca	aggcccaggc	gacgaggagc	ccgcaggaga	ggaacacgcg	60
gctggagaac	atgtgctgga	ggatttgga	cctcgcgagg	gaggagaagc	agcttgaaag	120
tgaagangnc	cagagaaaag	ctaagcgtcg	acttgaacgt	gaaaggggtc	gcagagaagc	180
gactgaggac	atgtctgagg	acttatctga	gggagaaaag	ggtgatgcag	tcagcgatat	240
atcnactcat	ggtgatagca	acagaggcan	nttgccatagg	ataagttctg	ttgatgcaat	300
ggagacatgg	attggtcaac	agaaggggaa	gaagctttac	cttgatttaa	taagtcttca	360
tggccttata	cggggtgaaa	acatggagct	tggccgtg			398

<210> 532
 <211> 225
 <212> DNA
 <213> Eucalyptus grandis

<400> 532
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 cgccggcagaa gaagcagctt gaagggtgaag aagcccagag aaaatctaag cgtcgacttg 120
 aacgtgaaag gggtcgcaga gaagcgactg cggacatgtc tgaggactta tctgaggag 180
 aaaagggtga tgcagtcagc gatatatcga ctcattggtga tagca 225

<210> 533
 <211> 415
 <212> DNA
 <213> Eucalyptus grandis

<400> 533
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 gagaacatgt gctggaggat ttggaacctc gcgcggcaga agaagcagct tgaagggtgaa 120
 gaagcccaga gaaaagctaa gcgtcgactt gaacgtgaaa ggggtcgcag agaagcgact 180
 gcggacatgt ctgaggactt atctgaggga gaaaagggtg atgcagtcag cgatatatcg 240
 actcatggtg atagcaacag aggcagattg cctaggataa gttctgttga tgcaatggag 300
 acatggattg gtcaacagaa ggggaagaag ctttaccttg tattaataag tcttcattggc 360
 cttatacggg gtgaaaacat ggagcttggc ccgtgactcg gatactggtg gtcag 415

<210> 534
 <211> 335
 <212> DNA
 <213> Eucalyptus grandis

<400> 534
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 acttggtcga gataagttgg aacaactcct caagcaaggc cgtctgtcca gggatgaaat 120
 caatacgaca tacaagataa tgcgccgaat agaggcagaa gaactgtccc ttgattcctc 180
 tgagatagtg ataactagta ctaggcagga gattgatgag caatggcgct tgtatgatgc 240
 ttttgatccg atattggaga agaagctacg agcaaggata aagcgcaatg taagctgtta 300
 tgggaaggttc atgccgcgca tggctataat acctc 335

<210> 535
 <211> 238
 <212> DNA
 <213> Eucalyptus grandis

<400> 535
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 cagcgccctt gcctgcggcg gcgatggcgg ggaacgactg gatcaacagc tacctcgagg 120
 cgatcctcga cgtcggcccc gcgtcgacg acaagaaatc gtcgctgctg ctgcggggagc 180
 gcggccgctt cagccccacc cgctacttcg tcgaggaggt catcaccggc ttcgatga 238

<210> 536
 <211> 441
 <212> DNA
 <213> Eucalyptus grandis

<400> 536
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 gtacgtttag agccccagat agaagagcag cggaatcccc agcatcagca tagtgaccat 120

ggatggcaac	aggccacact	ggttgccac	cgccaacttg	ctctcctagg	acttttgaca	180
tttgtattac	atggctgagt	gcaccgtcaa	caaattcagg	gatgtggggc	cataaaagtt	240
cctttggaat	atacttatct	cttgggtccaa	aagggtatacg	gacgatataa	gcaccactgc	300
tctctcccat	ttcgtccgat	aaaccttcag	aatctcttgg	agacaacatc	tccgtggggt	360
cgccataact	ccaatcaaca	tctgggtgatg	atatctgtct	agtaagcaag	tccactcgat	420
aaacgcctgg	cattgaacct	a				441

<210> 537

<211> 389

<212> DNA

<213> Eucalyptus grandis

<400> 537

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gggggtgagtt	gtacgggacg	gtacatgccg	aggatgggtg	tcatacctcc	gggaatggac	180
ttcagcaatg	tgaaagtaga	agattcaact	gaaagcgaga	gcgacctcaa	atccttgatt	240
agttcagaca	agactcctaa	caagagacat	ttaccgcgca	tatgggtctga	ggtgatgaga	300
tttttctcga	atcctcataa	gccgatgata	ctggcattgt	cccgtcctga	ccccaagaaa	360
aatgtcacia	ccttgctgaa	ggcttttcgg				389

<210> 538

<211> 647

<212> DNA

<213> Eucalyptus grandis

<400> 538

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ctctagccag	cgccccctgc	ctgcggcggc	ggcgatggcg	gggaacgact	ggatcaacag	120
ctacctcgag	gcgatcctcg	acgtcgggcc	ggcgctcgac	gacaagaaat	cgctcgctgct	180
gctgcgggag	cgcgggcgct	tcagccccac	ccgctacttc	gtcgaggagg	tcataccggg	240
cttcgatgag	accgatctct	accgctcctg	ggtcaaggcc	caggcgacga	ggagccccga	300
ggagaggaac	acgcggctgg	agaacatgtg	ctggaggatt	tggaaacctg	cgcggcagaa	360
gaagcagctt	gaagggtgaag	aagcccagag	aaaagctaag	cgctcgactg	aacgtgaaag	420
gggtcgcaga	gaagcgactg	cggacatgtc	tgaggactta	tctgaggagg	aaaagggtga	480
tgcatgcagc	gatatatcga	ctcatgggtga	tagcaacaga	ggcagattgc	ctaggataag	540
ttctgttgat	gcaatggaga	catggattgg	tcaacagaag	gggaagaagc	tttaccttgt	600
attaataagt	cttcatggcc	ttatacgggg	tgaaaacatg	gagcttg		647

<210> 539

<211> 340

<212> DNA

<213> Eucalyptus grandis

<400> 539

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ctcgacgtcg	gcccggcgct	cgacgacaag	aaatcgctcg	tgctgctgcg	ggagcgcggc	180
cgcttcagcc	ccaccgcta	cttcgctcgag	gaggtcatca	ccggcttcga	tgagaccgat	240
ctctaccgct	cctgggtcaa	ggcccaggcg	acgaggagcc	cgcagganag	gaacacgcga	300
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<210> 540

<211> 320

<212> DNA

<213> Eucalyptus grandis

<400> 540
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 gatcctcgac gtcggcccgg cgctcgacga caagaaatcg tcgctgctgc tgcgggagcg 180
 cggccgcttc agccccaccc gctacttcgt cgaggaggtc atcaccggct tcgatgagac 240
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 cggaggagac gtctcgttcg 320

<210> 541

<211> 386

<212> DNA

<213> Eucalyptus grandis

<400> 541
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 gagcaagttg gcggtggcca accagtgtgg cctgttgcca tccatgggtca ctatgctgat 180
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 cactcacttg gtcgagataa gttggaacaa ctctcaagc aaggccgtct gtccagggat 300
 gaaatcaata cgacatacaa gataatgcgc cgaatagagg cagaagaact gtcccttgat 360
 tctctgagat agtgataact atacta 386

<210> 542

<211> 326

<212> DNA

<213> Eucalyptus grandis

<400> 542
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 gatcctcgac gtcggcccgg cgctcgacga caagaaatcg tcgctgctgc tgcgggagcg 180
 cggccgcttc agccccaccc gctacttcgt cgaggaggtc atcaccggct tcgatgagac 240
 cgatctctac cgctcctggg tcaagggtgag tcagatcgag agcgcgcgcg cggggggcggc 300
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<210> 543

<211> 363

<212> DNA

<213> Eucalyptus grandis

<400> 543
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 ccggcttcga tgagaccgat ctctaccgct cctgggtcaa ggcccaggcg acgaggagcc 300
 cgcaggagag gaacacgcgg ctggagaaca tgtgctggag gatttggaac ctcgcgcggc 360
 aga 363

<210> 544

<211> 558

<212> DNA

<213> Eucalyptus grandis

<400> 544
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 ccagcgcccc tgctgcggc ggcgatggcg gggaacgact ggatcaacag ctacctcgag 120

gcgatcctcg	acgtcggccc	ggcgctcgac	gacaagaaat	cgtcgctgct	gctgcgggag	180
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ccgatctcta	ccgctcctgg	gtcaaggccc	atgcgacgag	gagcccgcag	gagaggaaca	300
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aagggtgaaga	agcccagaga	aaatctaagc	gtcgacttga	acgtgaaagg	ggtcgcagag	420
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atatatcgac	tcatggtgat	agcaacagag	gcagattgcc	taggataagt	tctgttgatg	540
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<210> 545

<211> 414

<212> DNA

<213> Eucalyptus grandis

<400> 545

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ggcccggcgc	tcgacgaccc	caagtcgtcg	tcgctgctgc	tgaggagag	gggcccgttc	180
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aacatgtgct	ggaggatatg	gaatctcgct	cgcaagaaga	agcngcttga	gggagaggaa	360
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<210> 546

<211> 289

<212> DNA

<213> Eucalyptus grandis

<400> 546

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gcgatcctcg	acgtcggccc	ggcgctcgac	gacaagaaat	cgtcgctgct	gctgcgggag	180
cgcgcccgct	tcagcccacc	cgctacttcg	tcgaggaggt	catcaccggc	ttcgatgaga	240
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<210> 547

<211> 227

<212> DNA

<213> Eucalyptus grandis

<400> 547

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atgggtgatag	caacagaggc	agattgccta	ggataagttc	tggtgatgca	atggagacat	120
gggttggtca	acagngggga	agaagcttta	ccttgattata	ataagtcttc	atggcctata	180
cggggtgaaa	acatggagct	tggccgagac	tcggatactg	gtggtca		227

<210> 548

<211> 415

<212> DNA

<213> Pinus radiata

<400> 548

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gttgacagacc	aagagcctgc	agaagctgat	ggagaccttg	cagctttgat	caatgggtgat	120
ggtaacttat	ctcctaaagc	cttgccaccc	atatgggtccg	aggtgatgcg	ttttttcaca	180
aatcgacaca	aacctatgat	tcttgcttta	tcacgacctg	atccccaaaa	aaaatctcac	240
tactctagtc	aaagcgtttg	gagaatgccg	gccattaaaa	gagctggcaa	atttgacact	300

agtaatggga aacagagatg atatagatga aatgtcggga ggtaatgcag ctgttctaac 360
aacggttttg aagctgatag ataagtatga cttgtatggg caagttgctt atcca 415

<210> 549

<211> 299

<212> DNA

<213> Pinus radiata

<400> 549

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aagcgcgctt tttcgcggaa cttctccgac ttgcaagtct ggtctgatga caataaggga 180
aagcgcctgt acattgtgct cataagcttg catgggttag taagagggtga aaacatggaa 240
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<210> 550

<211> 304

<212> DNA

<213> Pinus radiata

<400> 550

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cagataatga tttagataat gattctgttc aattgcccga gtctccttta tggggtgaga 180
tcccacgggt tttgaacaat ccctcgaagc ccattatatt ggctcttgct cgacctgac 240
ccaagaagaa catggccact ttagtcaagg cttttgggtga atgtatcaaa ttgaggaagc 300
tggc 304

<210> 551

<211> 464

<212> DNA

<213> Pinus radiata

<400> 551

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gccatacatt ccagagtttg tagatggagc actgggtcat attcttaata tttccaaagc 180
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tgcagatgca ggggatgctg cttgccttct ttctgggtgct ctgaacgttc caatggtttt 300
gacaggccat tctctaggcc gaaataaact agaacaatta ttgaaacaag gattgcattc 360
caaggaagat atcaatgcaa cgtacaagat catgcgtagg attgaagctg aagaattgtg 420
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<210> 552

<211> 312

<212> DNA

<213> Eucalyptus grandis

<400> 552

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agncgacgag ccccatattt ctgggtggcat caccgaactc aaggggggttgc taccggggg 240
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ttgaataatt ga 312

<210> 553

<211> 442
 <212> DNA
 <213> Eucalyptus grandis

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 acatttgcca cttgtcatgg tgggtccggca gagaaattga acatgggggt ttaggatatc 180
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 gtaaaaggga ccccaatcac tggactaaaa tctctgctgc tggacttcag aggatctatg 300
 aaaggtagac ctggaagatt tattcagaga ggctgatgac actggcaggg gtttatggct 360
 tctggaagta tgtttcaaag ctcgagaggc gtgagaccgg gcgaatcttg agatgtttta 420
 cattcttaaa ttccgggaat tg 442

<210> 554
 <211> 421
 <212> DNA
 <213> Eucalyptus grandis

<400> 554
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 tttttgttca gccggctttt tatgaagctt ttggacttac agttgttgag gctatgacgt 180
 gcggccttcc aacatttgcc acttgtcatg gtgggtccggc agagataatt gaacatgggtg 240
 tatcaggata tcatattgat ccatatcatc ctgaccaggc tgctacccta ctggcagatt 300
 tctttgagca aagtaaaaag gacccaatc actggactaa aatctctgct gctggacttc 360
 agaggatcta tgaaaggtag acctggaaga tttattcaga gaggctgatg aactggcag 420
 g 421

<210> 555
 <211> 448
 <212> DNA
 <213> Pinus radiata

<400> 555
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 accaaaaagc cattctaaaag caagatgggtg tcttacttgt gttcaagtgt gtcaacagga 120
 ctgaacagaa gttcttcaat agcgtcatgg aaatgtgtaa gccgactctc tctttctttg 180
 taaggggaaat atatactcat atcagctcca ggagccacaa tgttgaattt gggatcgaaa 240
 acatcaatgc ctgagactac acggtattgc ccaggcagtg taaaagcacc gtggctttca 300
 tactgcccac ctgtgtcctc actgcatcca ccagaatatg gnaaactata aacatttcag 360
 ccaactacaa tgttaaaatg aaactttattc aatgctaaga caaataaaat gagggctgaa 420
 gcttagggccc tttgcttcaa aaaaaaaaa 448

<210> 556
 <211> 348
 <212> DNA
 <213> Eucalyptus grandis

<400> 556
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 gttcgtgctg tcggccgggc acggttgcat gctgcagtac gcccttatgc atctcgctgg 120
 gtatgacagc gtccaggagg aagacttgaa aggcttccgg cagtggggaa gcaagacccc 180
 tggccatccg gagaactttg agacaaccgg tatcgaaagt acaacaggct cactcgggca 240
 aggaattgcc aatgctgttg gtttggcact cgtagagaag catttggtg ctgccttcaa 300
 taaaccggac agtgaaatag ttgaccacta cacatatgtc atccttgg 348

<210> 557
 <211> 369
 <212> DNA
 <213> Eucalyptus grandis

<400> 557
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 ggttcgtgct gtcggccggg cacggttgca tgctgcagta cgcccttatg catctcgctg 120
 ggtatgacag cgtccaggag gaagacttga aaggcttccg gcagtgggga agcaagaccc 180
 ctggccatcc ggagaacttt gagacaaccg gtatcgaagt tacaacaggt ccactcgggc 240
 aaggaattgc caatgctgtt ggtttggcac tcgtagagaa gcatttggct gctcgttca 300
 ataaaccgga cagtgaataa gttgaccact acacatatgt atccttggag atggttgcca 360
 gatggaggg 369

<210> 558
 <211> 470
 <212> DNA
 <213> Eucalyptus grandis

<400> 558
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 tcaataaacc ggacagtga atagttgacc actacacata tgatcatcctt ggagatgggt 120
 gccagatgga gggatatttc aatgaagctt gttcacttgc tggcactgg ggacttggaa 180
 agttgattgc tttctatgac gacaaccaca tctctatcga tggatgatac gaaattgcat 240
 tcaccgagag tgttgacacc cgtttcgagg gtcttgggtg gcattgcata tgggtgaaaa 300
 acggaaacac tggctatgat gagatacgtg ctgctattaa ggaagcgaag gctgtcaagg 360
 ataagcctac attaatgaag gtgactacca ccattggcta cggttcacct acaaggacaa 420
 ctcatatagt gtgcatggga gcgcactggg tgccaaggaa gtcgatgcac 470

<210> 559
 <211> 356
 <212> DNA
 <213> Eucalyptus grandis

<400> 559
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 aagcctactt tgattaagggt aactacgacc ataggttatg gttcacctaa caagtccaac 120
 agctacagtg tgcattgtag tgcactgggc gccaaaggaag ttgatgcaac taggaataac 180
 cttggttggc catatgagcc tttccatgtg cctgaggatg ttaaaaagca ctggagtcgc 240
 catactcctg ttggtgctgc cgttgaagct gaattggaatg caaaatttgc tgaatatgag 300
 aagaaatata aggatgaagc tgcagtgtg aaatctatca ttaagggcga actacc 356

<210> 560
 <211> 447
 <212> DNA
 <213> Eucalyptus grandis

<400> 560
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 cattcaccga gagtgttgac acccgtttcg agggctcttg ttggcatgtc atatgggntg 180
 aaaaacggaa aactcggcta tgatgaaata cgtgctgcta ttaaggaagc gaaggctgtc 240
 aaggataagc ctacattaat taagggtgact accaccattg gctacgggtc acctaacaag 300
 gccaaactcat atagtgtgca tgggagcgca ctgggtgcca aggaagttga tgcaacaagg 360
 aagaaccttg gttggccata tgaacctttc catgtgcctg aggatgtcaa agcgactgg 420
 agtcgccatg tccctgctgg cgctgct 447

<210> 561
 <211> 398
 <212> DNA
 <213> Eucalyptus grandis

<400> 561
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 tgtgcatggg agtgcaactgg gcgccaagga agttgatgca actaggaata accttggttg 120
 gccatatgag cctttccatg tgcctgagga tgtaaaaaag cactggagtc gccatactcc 180
 tggttggtgct gctggttgaag ctgaatggaa tgcaaaatct gctgaatatg agaagaaata 240
 caaggatgaa gctgcagtgc tgaaatctat cattaagggg gaactacctg ctgggtggga 300
 gaaagccctg ccgacgtaca cccagagatg tccagcagat gctaccagaa acctctctna 360
 acaatgcctc aatgcccttg tggatgtggg gcctgggc 398

<210> 562
 <211> 406
 <212> DNA
 <213> Eucalyptus grandis

<400> 562
 gacacctggg catcctgaga acttcgagac gcccgggtatt gaagttacga caggtccact 60
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 tttcaacaaa ccggacaatg aaattgtcga ccactacaca tatgccgttc ttggagatgg 180
 atgtcaaatg gaaggcattg cgaatgaagc ttgttccctc gctgggcact ggggacttgg 240
 gaagctgatt gccttttatg atgacaacca catctccatt gatggtaaca cagagattgc 300
 attcaccgag aatgttgaga aacgttttga gggctctggg tggcatgtta tatgggtgaa 360
 aaatggtaac actggttatg atgaaattcg tgctgccatc aaagaa 406

<210> 563
 <211> 413
 <212> DNA
 <213> Eucalyptus grandis

<400> 563
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 gtccattttc aaggggtgaac tgctgctggg ttgggaaaaa gcacttccga cgtatactcc 120
 tgagagtccct gctgatgcca ccaggaatct ctctcagcaa tgctgaaatg cctcgcctaa 180
 agtgcctgct ggtcttcttg gtggcagtcg tgatcttgct tcttccaaca tgacactgct 240
 taagatgttc ggtgatttcc aaaagggcac cccggaggaa cgcaatgtca ggttcgggtg 300
 tagagagcat ggaatgggag ctatttgcaa cgggattgcc ctgcacagcc ctgggtctcat 360
 tccatactgc gccacgttct ttgtcttcac tgactacatg anggctgcga tga 413

<210> 564
 <211> 398
 <212> DNA
 <213> Eucalyptus grandis

<400> 564
 gccatactcc tgttggtgct gccgttgaag ctgaatggaa tgcaaaatct gctgaatatg 60
 agaagaaata caaggatgaa gctgcagtgc tgaaatctat cattaagggc gaactacctg 120
 ctgggtggga gaaagccctg ccgacgtaca cccagagatg tccagcagac gctaccagaa 180
 acctctctca acaatgcctc aatgcccttg tggatgtggg gcctgggtct ctgggtggaa 240
 gtgcagatct tgcttctctc aacatgactc ttctcaaaaa gttcggcaat ttccaaaagg 300
 ataccctga ggaacgtaat gttagatttg gtgttaggga gcatggaatg ggggcatctc 360
 gcaatgggat tgctctccat agcccaggac ttatcccg 398

<210> 565

<211> 376

<212> DNA

<213> Eucalyptus grandis

<400> 565

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ctgaagtcca	ttttcaaggg	tgaactgcct	gctgggtggg	aaaaagcact	tccgacgtat	120
actcctgaga	gtcctgctga	tgccaccagg	aatctctctc	agcaatgcct	gaatgccctc	180
gctaaaagtgc	tgcttggtct	tcttggtggc	agtgtctgac	ttgcttcttc	caacatgaca	240
ctgcttaaga	tggttcggtga	tttccaaaag	ggcaccgccg	aggaacgcaa	tgtcagggtc	300
ggtgttagag	agcatggaat	gggagctatt	tgcaacggga	ttgccttgca	cagccctggt	360
ctcattccat	actgcg					376

<210> 566

<211> 327

<212> DNA

<213> Eucalyptus grandis

<400> 566

gccatactcc	tggttggtgct	gccgttgaag	ctgaatggaa	tgcaaaaattt	gctgaatatg	60
agaagaaata	caaggatgaa	gctgcagtgc	tgaaatctat	cattaagggc	gaactacctg	120
ctggttggga	gaaagccctg	ccgacgtaca	ccccagagat	tccagcagac	gctaccagaa	180
acctctctca	acaatgcctc	aatgcccttg	tggatgtggt	gcctggtctt	cttggtggaa	240
gtgcagatct	tgcttctctc	aacatgactc	ttctcaaaaa	gttcggcaat	ttccaaaagg	300
ataccctga	ggaacgtaat	gtagat				327

<210> 567

<211> 346

<212> DNA

<213> Eucalyptus grandis

<400> 567

gacacctggg	catcctgaga	acttcgagac	gcccgggtatt	gaagttacga	caggtccact	60
tggccaagga	atcgccaatg	ctggttggttt	ggctcttgcc	gagaaacatt	tggctgctcg	120
tttcaacaaa	ccggacaatg	aaattgtcga	ccactacaca	tatgccgttc	ttggagatgg	180
atgtcaaatg	gaaggcattg	cgaatgaagc	ttgttccctc	gctgggcact	ggggacttgg	240
gaagctgatt	gccttttatg	atgacaacca	catctccatt	gatggtaaca	cagagattgc	300
attcaccgag	aatggttgaga	aacgttttga	gggtctgggt	tggtcat		346

<210> 568

<211> 296

<212> DNA

<213> Eucalyptus grandis

<400> 568

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tggccaagga	atcgccaatg	ctggttggttt	ggctcttgcc	gagaaacatt	tggctgctcg	120
tttcaacaaa	ccggacaatg	aaattgtcga	ccactacaca	tatgccgttc	ttggagatgg	180
atgtcaaatg	gaaggcattg	cgaatgaagc	ttgttccctc	gctgggcact	ggggacttgg	240
gaagctgatt	gccttttatg	atgacaacca	catctccatt	gatggtaaca	cagaga	296

<210> 569

<211> 359

<212> DNA

<213> Eucalyptus grandis

<400> 569

cgagaatggt	gagaaacggt	ttgaggggtct	ggggttggcat	gttatatggg	tgaaaaatgg	60
taacactggg	tatgatgaaa	ttcgtgctgc	catcaaagaa	gcaaaggctg	ttaaagacaa	120
gcctactttg	attaaggtaa	ctacgaccat	aggttatggg	tcacctaaca	agtccaacag	180
ctacagtgtg	catggtagtg	caactgggccc	caaggaagtt	gatgcaacta	ggaataacct	240
tgggtggcca	tatgagcctt	tccatgtgcc	tgaggatggt	aaaaagcact	ggagtcgcca	300
tactcctggt	ggtgctgctg	ttgaagctga	atggaatgca	aaatttgctg	aatatgaga	359

<210> 570

<211> 394

<212> DNA

<213> Eucalyptus grandis

<400> 570

aacgtaatgt	tagattttggg	gtaggggagc	atggaatggg	ggccatctgc	aatgggattg	60
ctctccatag	cccaggactt	atcccgtact	gtgccacctt	ctttgtcttc	acagactaca	120
tgagggcagc	gatgaggatc	tctgcgcttg	ctgaatctgg	ggcatctac	gtcatgaccc	180
acgattctat	tggctcttggg	gaggatgggc	ccacgcacat	gccagttgag	cacttggtga	240
gcttccgtgc	tatgccaaac	attctaattgc	tccgcccagc	tgatgggaat	gaaactgctg	300
gtgcatacaa	ggttgctatt	gtaaacagga	agagaccttc	cgtcctcgtc	ctctccaggc	360
aaaagcttcc	caaccttcct	ggaacctcca	tcga			394

<210> 571

<211> 349

<212> DNA

<213> Eucalyptus grandis

<400> 571

gttatgggtc	acctaacaag	tccaacagct	acagtgtgca	tggtagtgca	ctgggcccga	60
aggaagtga	tgcaactagg	aataaccttg	gttggccata	tgagcctttc	catgtgcctg	120
aggatgttaa	aaagcactgg	agtcgccata	ctcctgttgg	tgctgctggt	gaagctgaat	180
ggaatgcaaa	atttgctgaa	tatgagaaga	aatacaagga	tgaagctgca	gtgctgaaat	240
ctatcattaa	gggtgaacta	cctgctggtt	gggagaaagc	cctgccgacg	tacacccag	300
agattccagc	agacgctacc	agaaacctct	ctcaacaatg	cctcaatgc		349

<210> 572

<211> 388

<212> DNA

<213> Eucalyptus grandis

<400> 572

tatcgatggc	gatacggaaa	ttgcattcac	cgagagtgtt	gacacccgtt	tcgaggggtct	60
tgggtggcat	gtcatatggg	tgaaaaacgg	aaacactggc	tatgatgaga	tacgtgctgc	120
tattaaggaa	gcgaaggctg	tcaaggataa	gcctacatta	attaagggtg	ctaccacat	180
tggtacggg	tcacctaaca	aggccaactc	atatagtgtg	catgggagcg	cactgggtgc	240
caaggaagtc	gatgcaacaa	ggaagaacct	tgggttggcca	tatgaacctt	tccatgtgcc	300
tgaggatgtc	aaagcgcact	ggagtcgcca	tgtccctgct	ggcgctgcta	ttgaagctga	360
atggaatgcc	aagtttgccg	agtatgag				388

<210> 573

<211> 342

<212> DNA

<213> Eucalyptus grandis

<400> 573

cttttatgat	gacaaccaca	tctccattga	tggtaacaca	gagattgcat	tcaccgagaa	60
tggttgagaaa	cgttttgagg	gtctgggttg	gcatgttata	tgggtgaaaa	atggtaaacac	120
tggttatgat	gaaattcgtg	ctgccatcaa	agaagcaaa	gctgttaaag	acaagcctac	180

tttgatggca	gcacgacat	aggttatggt	tcacctaaca	agtccaacag	ctacagtgtg	240
catggtaagt	gcactgggcg	ccaaggaagt	tgatgcaact	aggaataacc	ttggttgccc	300
atatgagcct	ttccatgtgc	ctgaggatgt	taaaaagcac	tg		342

<210> 574

<211> 526

<212> DNA

<213> Pinus radiata

<400> 574

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agatacaata	agccagactc	cactattggt	gatcattaca	catattgtat	tggttggtgat	120
ggctgccaaa	tggagggtat	ttccaatgag	gcttgcctgc	ttgctggaca	ctggggcctt	180
ggaaagctga	ttgcttttcta	tgatgacaac	cacatctcca	tagatggtga	cactgagatt	240
gcattcacag	aggatgttat	tactcgtttt	gaaggtctgg	gatggcacac	tatctgggtg	300
aagaatggaa	atacagggtta	tgatgaaatt	cgagctgcta	ttgaggaggc	caaactctgtg	360
aaggatagac	caactttaat	taagttcact	actaccattg	gctatgggtc	accaaataag	420
gcaaacagtt	acagtgtaca	tggaaagtgt	ttgggtgcaa	aggaggttga	tgcaaccagg	480
cagaatctgg	gttggcctca	tccgccttcc	acgtaccaga	ggaggt		526

<210> 575

<211> 295

<212> DNA

<213> Pinus radiata

<400> 575

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gcagttgggt	tggcacttgc	tgagaaacat	ctagcagcta	gatacaataa	gccagactcc	120
actattgttg	atcattacac	atattgtatt	gttgggtgatg	gctgccaaat	ggaggggtatt	180
tccaatgagg	cgtgctcgct	tgctggacac	tggggccttg	gaaagctgat	tgctttctat	240
gatgacaacc	acatctccat	agatgggtgac	actgagattg	cattcacaga	ggtgt	295

<210> 576

<211> 481

<212> DNA

<213> Pinus radiata

<400> 576

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ttcatggaag	tggcctcatt	ccttattgtg	ctactttctt	tgttttcaca	gactacatga	120
gagcagctat	tagaatctct	gcactctctg	aagctgggtg	tatctatgtn	atgacccatg	180
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tgacaattcc	tctggcaaca	agcctgatgt	cattcttatg	ggtagtggtc	tgagcttgag	480
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<210> 577

<211> 407

<212> DNA

<213> Pinus radiata

<400> 577

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ttcatggaag	tggcctcatt	ccttattgtg	ctactttctt	tgttttcaca	gactacatga	120
gagcagctat	tagaatctct	gcactctctg	aagctgggtg	tatctatgta	atgacccatg	180

attctattgg	tctcggagaa	gatgggcccc	ctcatcaacc	aatagagcac	ttggcgagct	240
ttagggcaat	gcccgaatgtt	ttgatgttcc	gtccagctga	tggaaaggag	acagctggag	300
cttacaagg	tgctgttctc	aatagaaaga	ggccatcaat	acttgctctc	tcccgtcaaa	360
aactcccaca	tcttgccggt	tcttcaatag	agggtgttga	gaagggg		407

<210> 578

<211> 332

<212> DNA

<213> Pinus radiata

<400> 578

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catctccata	gatggtgaca	ctgagattgc	attcacagag	gatgttatta	ctcgttttga	120
aggtctggga	tggcacacta	tctgggtgaa	gaatggaaat	acaggttatg	atgaaattcg	180
agctgctatt	gaggaggcca	aatctgtgaa	ggatagacca	actttaatta	agttcactac	240
taccattggc	tatgggtcac	caaataaggc	aaacagttac	agtgtacatg	gaagtgcttt	300
gggtgcaaaag	gagggtgatg	caaccaggca	ga			332

<210> 579

<211> 500

<212> DNA

<213> Pinus radiata

<400> 579

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tgaagctgg	gttatctatg	taatgacca	tgattctatt	ggtctcggag	aagatgggcc	180
cactcatcaa	ccaatagagc	acttggcgag	ctttagggca	atgcccaatg	ttttgatgtt	240
ccgtccagct	gatggaaagg	agacagctgg	agcttacaag	gttgctgttc	tcaatagaaa	300
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agaggggtgt	gagaaggagg	gctacattat	cagtgacaat	tcctctggca	acaagcctga	420
tgctattctt	atgggtagtg	gttctgagct	tgagattgct	gagaaagctg	catctacttt	480
gaggaatgaa	gggaaagctg					500

<210> 580

<211> 465

<212> DNA

<213> Pinus radiata

<400> 580

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attgttgatc	attacacata	ttgtattgtt	ggtgatggct	gccaaatgga	gggtatttcc	120
aatgaggcct	gctcgcttgc	tggacactgg	ggccttggaa	agctgattgc	tttctatgat	180
gacaaccaca	tctccataga	tggtgacact	gagattgcat	tcacagagga	tgttattact	240
cgttttgaag	gtctgggatg	gcacactatc	tgggtgaaga	atggaaatac	aggttatgat	300
gaaatttcgag	ctgctattga	ggaggccaaa	tctgtgaagg	atagaccaac	tttaattaag	360
ttcactacta	ccatttggcta	tgggtcacca	aataaggcaa	acagttacag	tgtacatgga	420
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<210> 581

<211> 494

<212> DNA

<213> Pinus radiata

<400> 581

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aatgcacttg	tgagggttct	tcccggactt	ttgggtggaa	gtgcagacct	tgcatcatcc	120

aacatgacat	tattaaaaat	gtttggtgac	ttccagaagg	ataccctgc	tgagcgcaat	180
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ggaagtggcc	tcattccctta	ttgtgctact	ttctttgttt	tcacagacta	catgagagca	300
gctattagaa	tctctgcact	ctctgaagct	ggtgttatct	atgtaatgac	ccatgattct	360
attggtctcg	gagaagatgg	gcccactcat	caaccaatag	agcacttggc	gagctttagg	420
gcaatgccc	atgttttgat	gttccgtcca	gctgatggaa	aggagacagc	tggagcttac	480
aaggtgctgt	tctc					494

<210> 582

<211> 505

<212> DNA

<213> Pinus radiata

<400> 582

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gctatctgca	atgggatagc	ccttcatgga	agtggcctca	ttccttattg	tgctactttc	120
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atacttgctc	tctcccgcga	aaactccac	atcttgccgg	ttcttcaata	gaggggtgtt	420
agaaggagg	ctacattatc	agtgacaatt	cctctggcaa	caagcctgat	gtcattctta	480
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<210> 583

<211> 399

<212> DNA

<213> Pinus radiata

<400> 583

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gttatctatg	taatgaccca	tgattctatt	ggtctcggag	aagatgggccc	cactcatcaa	240
ccaatagagc	acttggcgag	ctttagggca	atgcccgaatg	ttttgatgtt	ccgtccagct	300
gatggaaagg	agacagctgg	agcttacaag	gttgctgttc	tcaatagaaa	gaggccatca	360
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<210> 584

<211> 472

<212> DNA

<213> Pinus radiata

<400> 584

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cagaggatgt	tattactcgt	tttgaaggct	tgggatggca	cactatctgg	gtgaagaatg	180
gaaatacagg	ttatgatgaa	attcgagctg	ctattgagga	ggccaaatct	gtgaaggata	240
gaccaacttt	aattaagttc	actactacca	ttggctatgg	gtcaccaaat	aaggcaaaca	300
gttacagtgt	acatggaagt	gctttgggtg	caaaggaggt	tgatgcaacc	aggcagaatc	360
tgggttggcc	tcacccgct	ttccacgtac	cagaggaggt	taagagtcac	tggagtaggc	420
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<210> 585

<211> 531

<212> DNA

<213> Pinus radiata

<400> 585

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gcagagattc	taatagctgc	tctcatgtag	tctgtgaaaa	caaagaaagt	agcacaataa	180
ggaatgaggc	cacttccatg	aagggctatc	ccattgcaga	tagctcccat	ggaatgttca	240
cgcactccaa	aacggagatt	gcgctcagca	gggggtatcct	tctggaagtc	accaaacatt	300
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accctcacia	gtgcattcaa	acattgtttga	gatagatttc	gagtagcatc	agcaggactc	420
tccggagtat	ataccggcag	agccttatcc	cacccttcag	gcaatttacc	actaattagt	480
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<210> 586

<211> 385

<212> DNA

<213> Pinus radiata

<400> 586

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gctgagaaac	atctagcggc	tagatacaat	aagccagact	ccactattgt	tgatcattac	180
acatattgta	ttgttgggtga	tggtcgccaa	atggagggtga	tttccaatga	ggcctgctcg	240
cttgctggac	actggggcct	tggaaagctg	attgctttct	atgatgacaa	ccacatctcc	300
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ggatggcaca	ctatctgggt	gaaga				385

<210> 587

<211> 314

<212> DNA

<213> Eucalyptus grandis

<400> 587

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cggcaaaggc	gattgtcaac	aatctcatct	acctctana	cacatatggc	catgtcctaa	180
atggtgagag	ggtctactac	acgaaccgga	gccaacctcc	ccttctgagt	gcaatgatcc	240
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<210> 588

<211> 479

<212> DNA

<213> Eucalyptus grandis

<400> 588

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gaattttatt	attgggattc	gtattggatc	atcaaaggtc	ttctcacgag	tggaatgaat	180
attactgcga	aagggaattat	attaaatgct	cttgatctca	ttaaagaata	tgattttatt	240
cctaattggtg	cgagagtcta	ttacttaacc	aggagtcaac	ccccattact	ttctgagatg	300
gtcagatatt	attacgatta	tactcaggat	atggaactat	taagagaagc	agtcccaatc	360
ctcgacaaag	aatacaata	ttggatgaaa	accactcag	ttaacttgcc	tggaggatac	420
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<210> 589

<211> 362

<212> DNA

<213> Eucalyptus grandis

<400> 589

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acagctgaat	ctggatggga	ctttagtacc	agatggatga	ggaatcctga	ggatattact	300
acgttgga	caacatcaat	tttaccggtt	gatttgaaca	tatacatact	aaggatggaa	360
ct						362

<210> 590

<211> 190

<212> DNA

<213> Pinus radiata

<400> 590

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gacttactat	acgaacagaa	gtcaacctcc	tctcctaagt	gccatggtac	gggccattta	180
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<210> 591

<211> 301

<212> DNA

<213> Pinus radiata

<400> 591

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gacttactat	acgaacagaa	gtcaacctcc	tctcctaagt	gccatggtac	gggccattta	180
catgaaaaca	ggggatattg	atctattaaa	aatggcattc	ccaactttgt	tacaggaaca	240
cagatttttg	aactcaggaa	tccataaagt	tatagtacgg	gatgcgcacg	gtgctgaaca	300
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<210> 592

<211> 468

<212> DNA

<213> Eucalyptus grandis

<400> 592

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ctgctcggcg	gcacccgggc	caccgtcgtc	gacaacctgg	acaactcctc	ggaaatcgcc	180
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gaccttcg	acagaccagc	cctcgaggaa	ctattcgctc	cgacaaagtt	tgatgctgtc	300
atacactttg	ctggattgaa	agcagtcggc	gaaagtgtac	agaaaccgct	gctttattat	360
gataacaatc	ttattgggac	aattacttta	ctagaagtga	tggcttccca	tgaatgtaaa	420
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<210> 593

<211> 601

<212> DNA

<213> Eucalyptus grandis

<400> 593

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ccagcgtcct	cgtcaccggc	ggctgcgggg	acattgggag	ccacaccgtg	ctccagctcc	120
tgctcggcgg	catccggggc	accgtcgtcg	acaacctgga	caactcctcg	gaaatcgccg	180
tccggagagt	caggggagct	cgccggcgag	tacggcccta	acctcgactt	ccacaagatg	240
gaccttcgcg	acagaccagc	cctcgaggaa	ctattcgcc	cgacaaagtt	tgatgctgtc	300
atacactttg	ctggattgaa	agcagtcggc	gaaagtgtac	agaaaccgct	gctttattat	360
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gaggagtttc	ccctttgtgc	tacgaatcca	tatggacgaa	ccaagcta	tatcgaagat	540
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<210> 594
 <211> 239
 <212> DNA
 <213> Eucalyptus grandis

<400> 594						
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gagatgggtg	ctgcatttga	gaaggcatct	ggaaaggnaa	ttcctcttgt	aatggctgga	180
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<210> 595
 <211> 388
 <212> DNA
 <213> Eucalyptus grandis

<400> 595						
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cgctcgtcga	aacctcgaca	actcctcccc	cgccgccctc	gaccgggtcc	gcgacctcgc	180
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<210> 596
 <211> 454
 <212> DNA
 <213> Eucalyptus grandis

<400> 596						
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gggaacaggg	aagggaactt	cagtcttgga	gatgggtgct	gcatttgaga	aggcatctgg	360
aaagaaaatt	ccactcggtta	aggctgggcg	ccgaccaggt	tgatgctgaa	attgtatatg	420
catcaacaga	aaaggctgaa	cacgaattga	actg			454

<210> 597
 <211> 443
 <212> DNA
 <213> Eucalyptus grandis

<400> 597

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gccaccgct	cgctcgtcgc	gacaacctcg	acaactcctc	ccccgccgcc	ctcgaccggg	120
tccgcgacct	cgccggcgag	cgcgccccca	acctctcctt	ccacgagggt	gacctccgag	180
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<210> 598

<211> 268

<212> DNA

<213> Eucalyptus grandis

<400> 598

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agtcctctct	cggcggccac	cgctcgtcgc	tcgtcgacaa	cctcgacaac	tcctcccccg	120
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aggttgacct	ccgagacaaa	ccggcgctgg	agaaattggt	ctcctcgacc	aaatttgatg	240
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<210> 599

<211> 437

<212> DNA

<213> Eucalyptus grandis

<400> 599

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<210> 600

<211> 578

<212> DNA

<213> Eucalyptus grandis

<400> 600

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<210> 601

<211> 160

<212> DNA

<213> Eucalyptus grandis

<400> 601

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<210> 602

<211> 381

<212> DNA

<213> Eucalyptus grandis

<400> 602

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<210> 603

<211> 357

<212> DNA

<213> Eucalyptus grandis

<400> 603

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<210> 604

<211> 315

<212> DNA

<213> Eucalyptus grandis

<400> 604

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<210> 605

<211> 368

<212> DNA

<213> Eucalyptus grandis

<400> 605

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gcctgggtgat	tatgcagaag	tgtatagtga	cccagaccaag	gtcaagctcg	agctaaactg	300

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<210> 606
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<212> DNA
<213> Eucalyptus grandis

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<210> 607
<211> 356
<212> DNA
<213> Eucalyptus grandis

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<210> 608
<211> 462
<212> DNA
<213> Eucalyptus grandis

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<210> 609
<211> 362
<212> DNA
<213> Eucalyptus grandis

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cgccctcgac cgggtccgcg acctcgccgg cgagcgccgc ccagcctct ccttccacga 180

ggttgacctc	cgagacaaac	cggcgctgga	gaaattgttc	tcctcgacca	aatttgatgc	240
tgtcatcac	tttgctggat	tgaaagcagt	aggtgaaagt	gtgcagaagc	cgctgcttta	300
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<210> 610
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 <212> DNA
 <213> Eucalyptus grandis

<400> 610						
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atttcaacaa	taacctcaat	gggaccatca	tcttgctgga	agtcatggct	gctcatggat	360
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<210> 611
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 <212> DNA
 <213> Eucalyptus grandis

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cgcgccccca	acctctcctt	ccacgaggtt	gacctccgag	acaaaccggc	gctggagaaa	240
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ctg						363

<210> 612
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 <212> DNA
 <213> Eucalyptus grandis

<400> 612						
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tggaagtc	ggctgctcat	ggatgtaaga	agcttggtgt	ttcctcatct	gctactgttt	420
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<210> 613
 <211> 383
 <212> DNA
 <213> Pinus radiata

<400> 613						
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ggatgggtac	gagggtttata	tcattcgacaa	tttagataac	tctgttgaag	aagcagtga	180

cagagtgagg gatttagttg atcagcgctt cgcctaaat cttcactttt ttctgggaga	240
tctttgcaac aaagagggat gtagagaagg ttttttcatt ggccaaattc gatgctgtga	300
tacattttgc tggattgaag gctgttgga gaaagtgtag caattccatt acgtaattac	360
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<210> 614

<211> 517

<212> DNA

<213> Pinus radiata

<400> 614

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agccacaccg ccctgcagct cctcgaggat ggctacgagg tttatatcat cgacaattta	180
gataactctg ttgaagaagc agtccacaca gtgagggatt tagttgatca gcgcttccgc	240
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tcattggcca aattcgatgc tgtgatacat tttgctggat tgaaggctgt tggagaaagt	360
gtagcaattc cattacgtta ttacaagaac aatctagttg gcactctgaa cctatatgag	420
attatggcca aacatggttg caaaaagatg gttttttcat catcagctac agtttatggg	480
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<210> 615

<211> 473

<212> DNA

<213> Pinus radiata

<400> 615

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gaggcatgtt actctttaga tttttgaagt ttttgggcta atacagagcg atagttagca	180
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cttcagaaga agctattaca agagttgcta agctcgctgg cgaatatggg ggcaatctca	360
ccttccataa gattgatctt ctgggtaaaa gaagctatgg agaaattgtt cttatcaaca	420
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<210> 616

<211> 323

<212> DNA

<213> Pinus radiata

<400> 616

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tggagctcac ccaagtggcc agattgggtga agatccaaag ggaattccaa ataacctcat	180
gcctttcatc caacaagtgg ctgtgggaag gcaaccagtg ctgaacgtat atggtaatga	240
ttaccaaaca aggatggca cagcgggttc agattacatt catgtggtag acttggctga	300
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<210> 617

<211> 497

<212> DNA

<213> Pinus radiata

<400> 617

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caccgccctg	cagctcctcg	aggatggcta	cgaggtttat	atcatcgaca	atttagataa	180
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ggccaaattc	gatgctgtga	tacattttgc	tggattgaag	gctgttggag	aaagtgtagc	360
aattccatta	cgttattaca	agaacaatct	agttggcact	ctgaacctat	atgagattat	420
ggccaacatg	gttgcaaaaa	gatgggtttt	tcatcatcag	ctacagttat	ggccaaccca	480
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<210> 618

<211> 384

<212> DNA

<213> Pinus radiata

<400> 618

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ataatctgga	taactcttca	gaagaagcta	ttacaagagt	tgctaagctc	gctggcgaat	180
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tgttcttatt	aacagaattt	gatgctgtca	ttcattttgc	tgggttgaaa	gctgtcggag	300
agagtgtagc	aaagccactg	ctttactaca	aaaacaacat	agttggcacc	ttaaacttat	360
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<210> 619

<211> 354

<212> DNA

<213> Pinus radiata

<400> 619

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ataatctgga	taactcttca	gaagaagcta	ttacaagagt	tgctaagctc	gctggcgaat	180
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tgttcttatt	aacagaattt	gatgctgtca	ttcattttgc	tgggttgaaa	gctgtcggag	300
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<210> 620

<211> 425

<212> DNA

<213> Pinus radiata

<400> 620

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gccctgcagc	tcctcgagga	tggctacgag	gtttatatca	tcgacaattt	agataactct	120
gttgaagaag	cagtgaacag	agtgaaggat	ttagttgatc	agcgcttccg	cctaaatctt	180
cacttttttc	tgggagatct	ttgcaacaaa	gaggatgtag	agaaggtttt	ttcattggcc	240
aaattcgatg	ctgtgataca	ttttgctgga	ttgaaggctg	ttggagaaaag	tgtagcaatt	300
ccattacggt	attacaagaa	caatctagtt	ggcactctga	acctatatga	gattatggcc	360
aaacatgggt	gcaaaaagat	ggttttttca	tcatcagcta	cagtttatgg	ccaacccaag	420
gtgat						425

<210> 621

<211> 623

<212> DNA

<213> Eucalyptus grandis

<400> 621

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tgggcagccg	tacatagtgc	agaccaatgt	gttcacgggt	ggaaaaggag	acagagaaca	420
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catgtaccag	attgtattct	tcgtggatga	cgtgccgatc	cgggtgttca	agaacagcaa	540
ggaccttggg	gtgaaattcc	ccttcaacca	gccgatgaaa	ttgtactcca	gcctgtggaa	600
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<210> 622

<211> 426

<212> DNA

<213> Eucalyptus grandis

<400> 622

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ggaccgaacc	acaacgaatt	cgacttcgag	ttcctgggca	acacgacagg	ggagccctac	420
ctggtc						426

<210> 623

<211> 412

<212> DNA

<213> Eucalyptus grandis

<400> 623

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ctactctggc	gctgggttcg	ggtcgaagag	caagtacatg	ttcggcaaag	ttaccatcca	300
gatcaagctc	gtcgaaggcg	actcggctgg	gaccgtcact	gctttctaca	tgctcgtcga	360
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<210> 624

<211> 373

<212> DNA

<213> Eucalyptus grandis

<400> 624

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cgacgactgg	gccaccaggg	gcggccgcct	caagaccgac	tggaccacag	cccccttcac	180
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cacggtgtcc	gagctgagcc	tccaccagaa	ccaccagctc	aagtgggtcc	aggcccanca	360
catggtctac	gac					373

<210> 625

<211> 351

<212> DNA

<213> Eucalyptus grandis

<400> 625

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cgggtgttca	agaacagcaa	ggaccttggg	gtgaaattcc	ccttcaacca	gccgatgaaa	180
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gactgggtcca	aggcgccgtt	cgtggcctct	taccgggggt	tccacattga	cgggtgcgaa	300
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<210> 626

<211> 270

<212> DNA

<213> Eucalyptus grandis

<400> 626

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ccagattgta	ttcttcgtgg	atgacgtgcc	gatccgagtg	ttcaagcaca	gcaaggaacc	180
ttgggggtgca	attccccttc	aaccagcccg	atgaaattgt	actccagcct	gtggaatgcg	240
gatgactggg	ccactcgggg	agggcttgag				270

<210> 627

<211> 267

<212> DNA

<213> Eucalyptus grandis

<400> 627

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taccagattg	tattcttcgt	ggatgacgtg	ccgatccgag	tgttcaagaa	cagcaaggac	180
cttgggggtga	aattcccctt	caaccagccg	atgaaattgt	actccagcct	gtggaatgcg	240
gatgactggg	ccactcggga	ggcttga				267

<210> 628

<211> 468

<212> DNA

<213> Eucalyptus grandis

<400> 628

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<210> 629

<211> 559

<212> DNA

<213> Eucalyptus grandis

<400> 629

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gtcgtcggat	ggaccgaacc	acaacgaatt	cgacttcgag	ttcctgggca	acacgacagg	420
ggagccctac	ctggtacaga	ccaacgtgta	cgtgaacggg	gtgggcaacc	gggagcagaa	480
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<210> 630

<211> 416

<212> DNA

<213> Eucalyptus grandis

<400> 630

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agggcgactc	ggctgggacc	gtcactgctt	tctacatgtc	gtcggatgga	ccgaaccaca	360
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<210> 631

<211> 250

<212> DNA

<213> Eucalyptus grandis

<400> 631

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gcggccgcat	caagaccgac	tggacccacg	cccccttcat	cacgtcctac	cgtaacttcg	180
agatcgacgc	gtgcgagtg	ccggcgacaa	tggcgggcgg	agacaccgcc	aagcgggtgca	240
gcagcgccgg						250

<210> 632

<211> 475

<212> DNA

<213> Eucalyptus grandis

<400> 632

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gtcgtcggat	ggaccgaacc	acaacgaatt	cgacttcgag	ttcctgggaa	cacgacaggg	420
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<210> 633

<211> 416

<212> DNA

<213> Eucalyptus grandis

<400> 633

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actactctgg	cgctgggttc	gggtcgaaga	gcaagtacat	gttcggcaaa	gttaccatcc	300
agatcangct	cgctcagggc	gactcggctg	ggaccgtcac	tgctttctac	atgtcgtcgg	360
atggaccgaa	ccacaacgaa	ttcgacttcg	agttcctggg	caacacgaca	ggggag	416

<210> 634

<211> 232

<212> DNA

<213> Eucalyptus grandis

<400> 634

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cgggtgttca	agaacagcaa	ggaccttggg	gtgaaattcc	ccttcaacca	gccgatgaaa	180
ttgtactcca	gcctgtggaa	tgcggatgac	ttgggcaatc	cggggagggt	tt	232

<210> 635

<211> 287

<212> DNA

<213> Eucalyptus grandis

<400> 635

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tgaggccaag	tgctgcgcta	ctcagggcca	gaggtggtgg	gaccagaagg	agttccagga	180
cctcgatgcc	ttccagtacc	ggaggctccg	gtgggtgcgc	tcgagataca	ccatctacaa	240
ctactgcgct	gatcgggnaga	ggtacccccgc	gatntccccg	gagtgc		287

<210> 636

<211> 240

<212> DNA

<213> Eucalyptus grandis

<400> 636

ggacgagaca	ccgatccgcg	tgcacaccaa	cttgaggcac	cggggcatcc	cgtacccgaa	60
ggaccagccc	atgggcgtct	acagctcgat	atggaacgcc	gacgactggg	ccaccaggg	120
cggccgcatac	aagaccgact	ggaccacgc	ccccttcatac	acgtcctacc	gtaacttcga	180
gatcgacgcg	tgcgagtgcc	cggcgaccat	ggcggcggca	gacaacgcca	agcgggtgcag	240

<210> 637

<211> 360

<212> DNA

<213> Eucalyptus grandis

<400> 637

gcacgacgag	atcgacttcg	agttcctcgg	caatctctcc	gggaaccctt	acacgctcca	60
caccaacgtg	ttctcgcagg	ggaaagggaa	cagagaacag	caatttcacc	tctgggttcga	120
tcccaccaag	gcatttcaca	cctactcgat	cgtctggaac	actcgacgca	tcatgtaatg	180
tcccaaaagc	tcatgacgaa	gacctctttt	tcctctctat	acgaaactag	aataccgctc	240
ctgttgctga	ctaaccgcgc	aattcctatt	tcagattctt	ggtggacaac	agtcccataa	300
gagtggttcaa	caacttggga	gtcgatcggc	gtgcctttcc	caagcaacca	acccatgagg	360

<210> 638

<211> 401

<212> DNA

<213> Eucalyptus grandis

<400> 638

ctcaagccaa	aatataagcc	aaagtataag	ccaaagtata	gagcaatcat	ggcccatgaa	60
ggtggaggtc	ctagtgtctc	ctccatgggtg	gtgtctgtga	gcttgctgct	gatggctgcc	120
gcttcgcccc	cagctgggaa	cttctaccag	gacttcgacc	tgacgtgggg	tggcagcgac	180
cgggccaaga	tcttcagcgg	gggtcagctc	ctgtcgtgt	ccctcgacag	agtgtcgggg	240
tcgggcttcc	ggtccaagaa	ggagtacctg	ttcggccgga	tcgacatgca	gctcaagctc	300
gtcgccggga	actccgccc	caccgtgacc	gcttactact	tgtcttcgca	agggccaaact	360
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<210> 639

<211> 461

<212> DNA

<213> Eucalyptus grandis

<400> 639

agaaacagag	cgacttcata	gctcgtgaag	aaaagctttt	gctctcgtc	ttcttcttct	60
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ttcgtgggtc	ttgcgttgtt	ggtgggtctg	gtcgcgggtg	cgaggtttga	ggagctctac	180
cagccgggct	gggcctatgg	accattttgt	ctacgaagga	gaggttctca	tgctcaagct	240
tgacaactac	tctggcgctg	ggttcgggtc	gaagagcaag	tacatgttcg	gcaaagttac	300
catccagatc	aagctcgtcg	agggcgactc	ggctgggacc	gtcactgctt	tctacatgtc	360
gtcggatgga	ccgaaccaca	acgaattcga	cttcgagttc	ctgggcaaca	cgacagggga	420
gccctacctg	gtacagacca	acgtgtacgt	gaacgggggtg	g		461

<210> 640

<211> 458

<212> DNA

<213> Eucalyptus grandis

<400> 640

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ttcactcaag	ggaagggcaa	cagggagcag	cagttctacc	tgtggtttga	ccccaccaga	120
aatttccaca	catactccgt	catctggaag	ccccagcaca	tcattcttct	ggtagacaac	180
attcctatta	gagttttcaa	gaatggagag	tcaattggcg	tgcccttccc	caagaaccag	240
cccatgaaaa	tatactcgag	cctctggaat	gccgatgatt	gggccacgag	aggcggactg	300
atcaagacag	actggtcgaa	atcgcccttc	acggcatact	acaggaagtt	ccaggccact	360
gcctgcacct	ggtccacggg	ctcgtctctc	tgtgagatcg	gacggcccgc	ttctactctt	420
ggatccacat	ggaaaatcaa	tgagctcgat	gcctatgg			458

<210> 641

<211> 283

<212> DNA

<213> Eucalyptus grandis

<400> 641

ctctggttcg	acccaactgc	tgatttccac	acctactcca	tcctctggaa	tcacaaacgc	60
atcatattct	cagtggacgg	gactcccatc	agagagttca	agaacgcaga	gtccatcggt	120
gttcccttcc	ccaaggccca	gcccattgag	atattctcga	gcctctggaa	cgcgacgac	180
tgggcgacca	gaggcgggct	cgtgaagacg	gactggacac	aagcgccctt	cactgcttcc	240
taccggaact	tcaacgccga	taacgcctgc	gtttggtcat	ctg		283

<210> 642

<211> 385

<212> DNA

<213> Eucalyptus grandis

<400> 642

gttcggccgg	atcgaagtca	atctcacctg	gaccgcttac	tacttgtctt	cgcaagggcc	60
aactcacgat	gagattgact	tcgagttcct	ggggaacctg	agcggcgacc	cttacatcct	120
ccacaccaac	gtcttcactc	aagggaaggg	caacagggag	cagcagttct	acctgtgggt	180
tgacccacc	agaaatttcc	acacatactc	cgctcatctg	aagccccagc	acatcatctt	240
cttggtagac	aacatcaccc	atctctctct	ctctctcccc	cactctctct	caagccaaaa	300
tataagccaa	agtataagcc	aaagtataga	gcaatcatgg	cccatgaagg	tggaggctct	360
agtgtctct	ccatgggtgt	gctcg				385

<210> 643

<211> 378

<212> DNA

<213> *Eucalyptus grandis*

<400> 643

ggcacaccca	ttttggccaa	ttcctctect	taatttcaaa	angccatggc	ttttcaaggc	60
gtcctttcga	ataagatggc	catggcactg	gttgcccttg	gcctcttggg	ggcgcccgcg	120
gcggcctccg	gcaacttcaa	caaggacttc	gacatcacgt	ggggtgatgg	ccgtgcgcag	180
atacccgagca	gtggccagct	cctcacgtct	tccttgga	agacgtcg	gtcggtcttc	240
cggtccaaga	agcagtactt	gttcgggaag	attgacatgc	agctcaaact	cgtgcctggg	300
aactccgccg	gcaccgtcac	cgcctattac	ctttcttctt	tgggttctgc	gcacgacgaa	360
atcgacttcg	agtttctc					378

<210> 644

<211> 430

<212> DNA

<213> *Eucalyptus grandis*

<400> 644

gcgacttcag	atctcgtgaa	gaaaagcttt	tgctctcgct	cttcttcttc	ttcttcttct	60
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gcgttggttg	tgggtctggt	cgcggtg	aggtttgagg	agctctacca	gccgggtg	180
gctatggacc	attttgtcta	cgaaggagag	gttctcaagc	tcaagcttga	caactactct	240
ggcgctgggt	tcgggtcgaa	gagcaagtac	atgttcggca	aagttaccat	ccagatcaag	300
ctcgtcgagg	gcgactcggc	tgggaccgtc	actgccttct	acatgtcgtc	ggatggaccg	360
aaccacaacg	aattcgactt	cgagttcctg	ggcaacacga	caggggagcc	ctacctggta	420
cagaccaacg						430

<210> 645

<211> 471

<212> DNA

<213> *Eucalyptus grandis*

<400> 645

ctcaagccaa	aatataagcc	aaagtataag	ccaaagtata	gagcaatcat	ggcccatgaa	60
ggtggaggtc	ctagtgtctt	ctccatggtg	gtgtcgtgta	gcttgctgct	gatggctgcc	120
gcttcgccc	cagctgggaa	cttctaccag	gacttcgacc	tgacgtgggg	tggcagcgac	180
cgcgccaaga	tcttcagcgg	gggtcagctc	ctgtcgtgt	ccctcgacag	agtgtcgggg	240
tcgggtcttc	ggtccaagaa	ggagtacctg	ttcggccgga	tcgacatgca	gctcaagctc	300
gtcgccggga	actccgccc	caccgtgacc	gcttactact	tgtcttcgca	agggccaaact	360
cacgatgaga	ttgacttcga	gttcctgggg	aacctgagcg	gcgaccctta	cctcctccac	420
accaacgtct	tcactcaagg	gaagggcaac	agggagcagc	agttctacct	g	471

<210> 646

<211> 480

<212> DNA

<213> *Eucalyptus grandis*

<400> 646

aatggctgca	cacgcatggg	ctctggttct	gggtcttgtt	ctgatggctt	ctggggcaat	60
gggggctgct	ccaagaaaagc	ctgtggcggg	ggcattcggg	agaaactaca	tgcccacatg	120
ggctttcgat	cacatcaagt	acttcaatgg	tggctccgag	atacagctct	ccttggacaa	180
atacacaggt	actggctttc	aatccaaggg	gtcttacctg	ttcgggcatt	tcagcatgga	240
catcaagttg	gttgctggag	attctgcagg	gacagtcact	gcattctacc	tctcatctca	300
aaactcagag	cacgacgaaa	tagactttga	gttcttgggt	aacaggagtg	ggcagccgta	360
catagtgcag	accaatgtgt	tcacggggagg	aaaaggagac	agagaacaga	ggatttatct	420
ttggttcgat	cccaccgncg	cctaccactc	ctactctgtt	ctctggaaca	tgtaccagat	480

<210> 647

<211> 284

<212> DNA

<213> *Eucalyptus grandis*

<400> 647

ctgttcgtgg	gtcttgcggt	gttggtgggt	ctggtcgcgg	gtgcgagggt	tgaggagctc	60
taccagccgg	gctgggctat	ggaccatttt	gtctacgaag	gagagggttct	caagctcaag	120
cttgacaact	actctggcgc	tgggttcggg	tcgaagagca	agtacatgtt	cggcaaagtt	180
accatccaga	tcaagctcgt	cgagggcgac	tcggctggga	ccgtcactgc	cttctacatg	240
tcgtcggatg	gaccgaacca	caacgaattc	gacttcgagt	tcct		284

<210> 648

<211> 459

<212> DNA

<213> *Eucalyptus grandis*

<400> 648

cctcactctc	atatcatctc	attgagattt	gcttctcttc	agcaactaca	gcagcagcag	60
cagcagacag	aacacgcca	atatggcctc	cctttctact	tcttcgcttc	gcatcgccac	120
tctgcttctc	gtggtcgttt	cttgggggac	gtttgcttcc	gcccgcaact	tctatcaaga	180
cttcgacata	acctgggggtg	atggccgagc	tcagatcctc	aacaacggcg	acctcctcac	240
tctctccctc	gacaaggcct	ccggctccgg	cttcaggtcc	agaacgagt	acttggtcgg	300
caagattgac	atgcagctca	agctagtctc	cggcaactcc	gctggcaccg	tcaccgcata	360
ctatttatct	tcaaacgggt	cggcgtggga	tgagatagac	ttcgagttct	tggggaactt	420
gagcggcgat	ccatacatto	tccacaccaa	cgtcttcag			459

<210> 649

<211> 402

<212> DNA

<213> *Eucalyptus grandis*

<400> 649

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tcaatggctg	tcccggctct	ttccaaagt	tctgtgtcgt	tcggcctgtt	cgtgggtctt	120
gcgttggttg	tgggtctggt	cgcgggtgag	aggtttgagg	agctctacca	gccgggctgg	180
gctatggacc	atthtgtcta	cgaaggagag	gttctcaagc	tcaagcttga	caactactct	240
ggcgttgggt	tcgggtcgaa	gagcaagtac	atgttcggca	aagttaccat	ccagatcaag	300
ctcgtcgagg	gcgactcggc	tgggaccgtc	actgccttct	acatgtcgtc	ggatggaccg	360
aaccacaacg	aattcgactt	cgagttcctg	ggcaacacga	ca		402

<210> 650

<211> 469

<212> DNA

<213> *Eucalyptus grandis*

<400> 650

gagaaacaga	gcgacttcag	agctcgtgaa	gaaaagcttt	tgctctcgt	cttcttcttc	60
ttcttcttct	tcaatggctg	tcccgggtctt	ttccaaagt	tctgtgtcgt	tgggctgtt	120
cgtgggtctt	gcgttggtg	tgggtctggt	cgcggtg	agggttgagg	agctctacca	180
gccgggctgg	gctatggacc	atcttctcta	cgaaggagag	gttctcaagc	tcaagcttga	240
caactactct	ggcgctgggt	tcgggtcgaa	gagcaagtac	atgttcggca	aagttaccat	300
ccagatcaag	ctcgtcgagg	gcgactcggc	tgggaccgtc	actgccttct	acatgtcgtc	360
ggatggaccg	aaccacaacg	aattcgactt	cgagttcctg	ggcaacacga	caggggagcc	420
ctacctggta	cagaccaacg	tgtacgtgaa	cgggggtggc	aaccgggag		469

<210> 651

<211> 473

<212> DNA

<213> *Eucalyptus grandis*

<400> 651

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gttcgtgggt	cttgcggtgt	tgggtgggtct	ggtcgcgggt	gcgaggtttg	aggagctcta	180
ccagccgggc	tgggctatgg	accattttgt	ctacgaagga	gaggttctca	agctcaagct	240
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catccagatc	aagctcgtcg	agggcgactc	ggctgggacc	gtcactgctt	tctacatgtc	360
gtcggatgga	ccgaaccaca	acgaattcga	cttcgagttc	ctgggcaaca	cgacagggga	420
gccctacctg	gtacagacca	acgtgtacgt	gaacgggggtg	ggcaaccggg	agc	473

<210> 652

<211> 454

<212> DNA

<213> *Eucalyptus grandis*

<400> 652

gagaaacaga	gcgacttcag	agctcgtgaa	gaaaagcttt	tgctctcgt	cttcttcttc	60
ttcttcttct	tcttcaatgg	ctgtcccgg	cttttccaaa	gtgtctgtgt	cgttcggcct	120
gttcgtgggt	cttgcggtgt	tgggtgggtct	ggtcgcgggt	gcgaggtttg	aggagctcta	180
ccagccgggc	tgggctatgg	accattttgt	ctacgaagga	gaggttctca	agctcaagct	240
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gtcggatgga	ccgaaccaca	acgaattcga	cttcgagttc	ctgggcaaca	cgacagggga	420
gccctacctg	gtacagacca	acgtgtacgt	gaac			454

<210> 653

<211> 435

<212> DNA

<213> *Eucalyptus grandis*

<400> 653

gtttgaggag	ctctaccagc	cgggctgggc	tatggaccat	tttgtctacg	aaggagaggt	60
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gttcggcaaa	gttaccatcc	agatcaagct	cgctgaagg	cgactcggct	gggaccgtca	180
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accgggagca	gaggctcggc	ctctgggtcg	acccaccac	tgacttcac	tcctactccg	360
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ccaacttgga	gcacc					435

<210> 654

<211> 386
 <212> DNA
 <213> Eucalyptus grandis

<400> 654

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cacgacgaga	tcgacttcga	gttcct				386

<210> 655
 <211> 289
 <212> DNA
 <213> Eucalyptus grandis

<400> 655

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agaaggagta	cctgttcggc	cggatcgaca	tgcagctcan	gctcgtcgcc	gggaactccg	180
ccggctccgt	gaccgcttac	tacttgtctt	cgcaaggggc	aactcacgac	gagatcgact	240
tcgagttcct	ggggaacctg	agcggcgacc	cttacatcct	ccacaccan		289

<210> 656
 <211> 422
 <212> DNA
 <213> Eucalyptus grandis

<400> 656

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tcttcgcaag	ggccaactca	cgatgagatt	gacttcgagt	tcctggggaa	cctgagcggc	420
ga						422

<210> 657
 <211> 445
 <212> DNA
 <213> Eucalyptus grandis

<400> 657

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cgacccacc	actgacttcc	actcctactc	cgctcctctg	aaccagcgcc	aagtcgtgtt	180
tcttgtggac	gagacaccga	tccgcgtgca	caccaacttg	gagcaccggg	gcatcccgta	240
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ccagggcggc	cgcacaaaga	ccgactggac	ccacgcccc	ttcatcacgt	cctaccgtaa	360
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<210> 658
 <211> 310

<212> DNA

<213> Eucalyptus grandis

<400> 658

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accttggggg	gaaattcccc	ttcaaccagc	cgatgaaatt	gtactccagc	ctgtggaatg	180
cggatgactg	ggccactcgg	ggagggcctt	agaagaccga	ctgggtccaag	gcgccgttcg	240
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gcgctactca						310

<210> 659

<211> 482

<212> DNA

<213> Eucalyptus grandis

<400> 659

aaacagagcg	acttcagagc	tcgtgaagaa	aagcttttgc	tctcgtctct	cttcttcttc	60
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gggtcttgcg	ttgttggtgg	gtctggctgc	gggtgcgagg	tttgaggagc	tctaccagcc	180
gggctgggct	atggaccatt	ttgtctacga	aggagaggtt	ctcaagctca	agcttgacaa	240
ctactctggc	gctgggttcg	ggtcgaagag	caagtacatg	ttcggcaaag	ttaccatcca	300
gatcaagctc	gtcgaaggcg	actcggctgg	gaccgtcact	gccttctaca	tgctcgtcga	360
tggaccgaac	cacaacgaat	tcgacttcga	gttcctgggc	aacacgacag	gggagcccta	420
cctggtacag	accaacgtgt	acgtgaacgg	ggtgggcaac	cgggagcaga	ggctcggcct	480
ct						482

<210> 660

<211> 415

<212> DNA

<213> Eucalyptus grandis

<400> 660

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gttcgtgggt	cttgcgttgt	tggtgggtct	ggctcggggg	gcgaggtttg	aggagctcta	180
ccagccgggc	tgggctatgg	accattttgt	ctacgaagga	gaggttctca	agctcaagct	240
tgacaactac	tctggcgctg	ggttcgggtc	gaagagcaag	tacatgttcg	gcaaagttac	300
catccagatc	aagctcgtcg	agggcgactc	ggctggggacc	gtcactgctt	tctacatgtc	360
gtcggatgga	ccgaaccaca	acgaattcga	cttcgagttc	ctgggcaaca	cgaca	415

<210> 661

<211> 542

<212> DNA

<213> Eucalyptus grandis

<400> 661

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tgaagggtgga	ggtcctagt	cttcctccat	ggtggtgctc	gtgagcttgc	tgctgatggc	120
tgccgcttcg	cccgagctg	ggaacttcta	ccaggacttc	gacctgacgt	ggggtggcag	180
cgaccggggc	aagatcttca	gcgggggtca	gctcctgtcg	ctgtccctcg	acagagtgtc	240
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gctcgtcgcc	gggaactccg	ccggcacctg	gaccgcttac	tacttgtctt	cgcaaggggc	360
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ccacaccaac	gtcttctactc	aagggaaggg	caacagggag	cagcagttct	acctgtgggt	480
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<210> 662
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 <212> DNA
 <213> Eucalyptus grandis

<400> 662
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 aagagcaagt acatgttcgg caaagttacc atccagatca agctcgtcga gggcgactcg 180
 gctgggaccg tcaactgcttt ctacatgtcg tcggatggac cgaaccacaa cgaattcgac 240
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<210> 663
 <211> 424
 <212> DNA
 <213> Eucalyptus grandis

<400> 663
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 ctttctacat gtcgtcggat ggaccgaacc acaacgaatt cgacttcgag ttcttgggca 180
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 tctggaacca gcgccaaagt gtgtttcttg tggacgagac accgatccgc gtgcacacca 360
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 tatg 424

<210> 664
 <211> 456
 <212> DNA
 <213> Eucalyptus grandis

<400> 664
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 caatggcgac ctctcactc tctcccttga caaggcctcc ggctccggct tccagtccaa 240
 gaacgagtac ttgttcggca agattgacat gcagctcaag ctcgttcctg gcaactccgc 300
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 <212> DNA
 <213> Eucalyptus grandis

<400> 665
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 ggacgactgg gcaaccagag gcgggctcgt aaagacagat tggacacaag cgcccttcac 180
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 aacaagccaa gagaggctga agtgggttca gagcaactac atgatctaca actactgtac 360
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<210> 666
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 <212> DNA
 <213> Eucalyptus grandis

<400> 666
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 ctggtacaga ccaa 434

<210> 667
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 <212> DNA
 <213> Eucalyptus grandis

<400> 667
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 aaccacaacg aattcgactt cgagttctcg ggcaacacga caggggagcc ctacctggtg 420
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<210> 668
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 <212> DNA
 <213> Eucalyptus grandis

<400> 668
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<210> 669
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 <212> DNA
 <213> Eucalyptus grandis

<400> 669
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agtgcagacc aatgtgttca cgggaggaaa aggagacaga gaacagagga tttatctttg 420
gttcgatccc accg 434

<210> 670
<211> 294
<212> DNA
<213> Eucalyptus grandis

<400> 670
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cagctctcct tggacaaata cacaggtact ggctttcaat ccaaggggtc ttacctgttc 180
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<210> 671
<211> 396
<212> DNA
<213> Eucalyptus grandis

<400> 671
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<210> 672
<211> 287
<212> DNA
<213> Eucalyptus grandis

<400> 672
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cgggncgaag agcaagtaca tgctcggaag agttaccatc cagatcaagc tcgncgaggg 180
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<210> 673
<211> 445
<212> DNA
<213> Eucalyptus grandis

<400> 673
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ccgaaccaca acgaattcga cttcgagttc ctgggcaaca cgacagggga gccctacctg 420
gtacagacca acgtgtaccg tgaac 445

<210> 674

<211> 387
 <212> DNA
 <213> Eucalyptus grandis

<400> 674
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 acttcgagtt tctcggtaac ctgagcg 387

<210> 675
 <211> 324
 <212> DNA
 <213> Eucalyptus grandis

<400> 675
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 gggctcgtcc caccagtacc gcctctccct gccggcgctg ctgcaccgt tggcgttgctc 180
 tgccgccgcc atggctgccg ggcactcgca cgcgtcgatc tcgaagttac ggtaggacgt 240
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 gcgttcata tcgagctgta gacg 324

<210> 676
 <211> 330
 <212> DNA
 <213> Eucalyptus grandis

<400> 676
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 ttctgtagt atgccgtgaa gggcgctttc gaccagtctg tcttgatcag tccgcctctc 180
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<210> 677
 <211> 438
 <212> DNA
 <213> Eucalyptus grandis

<400> 677
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<210> 678
 <211> 362
 <212> DNA

<213> Eucalyptus grandis

<400> 678

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ggtcgaagag	caagtacatg	ttcggcaaag	ttaccatcca	gatcaagctc	gtcgaagggc	180
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tcgacttcga	gttcctgggc	aacacgacag	gggagcccta	cctgggtacag	accaacgtgt	300
acgtgaacgg	ggtgggcaac	cgggagcaga	ggctcggcct	ctggttcgac	cccaccactg	360
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<210> 679

<211> 424

<212> DNA

<213> Eucalyptus grandis

<400> 679

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ccaggaactc	gaagtcgaat	tcgttggtgt	tcggtccatc	cgacgacatg	tagaaagcag	420
tgac						424

<210> 680

<211> 414

<212> DNA

<213> Eucalyptus grandis

<400> 680

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ttgccccccc	cgttcacgta	cacgttggtc	tgtaccagg	agggctcccc	tgtcgtgttg	360
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<210> 681

<211> 239

<212> DNA

<213> Eucalyptus grandis

<400> 681

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gtggcccaat	catcggcatt	ccagaggctc	gagtatatct	tcattgggctg	gctcttgggg	180
aagggcacgc	caattgactc	tgcattcttg	aaaactctga	taggaatgtt	gtctaccaa	239

<210> 682

<211> 319

<212> DNA

<213> Eucalyptus grandis

<400> 682

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tgcttagctt	cttagtctct	catgaccacc	aaattcagaa	tttgatcagg	cgccctgtc	180
cctcctgcac	tccggggaca	ttgcggggta	cctcttcgga	tcggcgagc	agttgtagat	240
ggtgtatttc	gagcgcaccc	accggagcct	cgggtactgg	aaggcatcga	ggtcctggaa	300
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<210> 683

<211> 424

<212> DNA

<213> Eucalyptus grandis

<400> 683

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ggcc						424

<210> 684

<211> 309

<212> DNA

<213> Eucalyptus grandis

<400> 684

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actcggctgg	gaccgtcact	gctttctaca	tgctcgtcga	tggaccgaac	cacaacgaat	240
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acgtgaacg						309

<210> 685

<211> 238

<212> DNA

<213> Eucalyptus grandis

<400> 685

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gagctgtaga	cgcccatggg	ctggtccttc	gggtacggga	tgccccggtg	ctccaagttg	180
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<210> 686

<211> 515

<212> DNA

<213> Eucalyptus grandis

<400> 686

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aggggagccc	tacctggtac	agaccaacgt	gtacgtgaac	ggggtgggca	accgggagca	480
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<210> 687

<211> 445

<212> DNA

<213> Eucalyptus grandis

<400> 687

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<210> 688

<211> 422

<212> DNA

<213> Eucalyptus grandis

<400> 688

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<210> 689

<211> 279

<212> DNA

<213> Eucalyptus grandis

<400> 689

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<210> 690

<211> 452

<212> DNA

<213> Eucalyptus grandis

<400> 690

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gccgggctgg	gctatggacc	atthttgtcta	cgaaggagag	gttctcaagc	tcaagcttga	240

caactactct	ggcgctgggt	tcgggtcgaa	gagcaagtac	atgttcggca	aagttaccat	300
ccagatcaag	ctcgtcgagg	gcgactcggc	tgggaccgtc	actgctttct	acatgtcgtc	360
ggatggaccg	aaccacaacg	aattcgactt	cgagttcctg	ggcaacacga	caggggagcc	420
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<210> 691

<211> 346

<212> DNA

<213> Eucalyptus grandis

<400> 691

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ttcctgtagt	atgccgtgaa	gggcgctttc	gaccagtctg	tcttgatcag	tccgcctctc	180
gtggcccaat	catcggcatt	ccagaggctc	gagtatatct	tcatgggctg	gttcttgggg	240
aagggcacgc	caattgactc	tccattcttg	aaaactctaa	taggaatgtt	gtctaccaag	300
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<210> 692

<211> 470

<212> DNA

<213> Eucalyptus grandis

<400> 692

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gtggcccaat	catcggcatt	ccagaggctc	gagtatatct	tcatgggctg	gctcttgggg	180
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aagatgatgt	gctgggggctt	ccagatgacg	gagtatgtgt	ggaaatttct	gggtgggtgca	300
aaccacaggt	agaactgctg	ctccctgttg	cccttccctt	gagtgaagac	gttgggtgtgg	360
aggatgtaag	ggtcgccgct	cagggtcccc	aggaactcga	agtcaatctc	gtcgtgagtt	420
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<210> 693

<211> 374

<212> DNA

<213> Eucalyptus grandis

<400> 693

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gagctgtaga	cgcccatggg	ctggctcttc	gggtacggga	tgccccgggtg	ctccaagttg	180
gtgtgcacgc	ggatcggtgt	ctcgtccaca	agaaacacga	cttggcgctg	gttccagagg	240
acggagtagg	agtgggaagtc	agtgggtggg	tgaaccaga	ggccgagcct	ctgctccccg	300
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<210> 694

<211> 409

<212> DNA

<213> Eucalyptus grandis

<400> 694

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cggcctgttc	gtgggtcttg	cggtgttggt	gggtctgggc	gcgggtgcga	ggtttgagga	180
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caagcttgac	aactactctg	gcgctgggtt	cgggtcgaag	agcaagtaca	tgttcggcaa	300
agttaccatc	cagatcaagc	tcgtcgaggg	cgactcggct	gggaccgtca	ctgctttcta	360
catgtcgtcg	gatggaccga	accacaacga	attcgacttc	gagttcctg		409

<210> 695

<211> 224

<212> DNA

<213> Eucalyptus grandis

<400> 695

tgccccggtg	ctccaagttg	gtgtgcacgc	ggatcgggtg	ctcgtccaca	agaaacacga	60
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ggccgagcct	ctgctcccgg	ttgcccaccc	cgttcacgta	cacgttggtc	tgtaccaggt	180
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<210> 696

<211> 442

<212> DNA

<213> Eucalyptus grandis

<400> 696

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ggtcgaagag	caagtacatg	ttcggcaaag	ttaccatcca	gatcaagctc	gtcgaagggc	180
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<210> 697

<211> 408

<212> DNA

<213> Eucalyptus grandis

<400> 697

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aagcttgaca	actactctgg	cgctgggttc	gggtcgaaga	gcaagtacat	gttcggcaaa	300
gttaccatcc	agatcaagct	cgtcgagggc	gactcggctg	ggaccgtcac	tgctttctac	360
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<210> 698

<211> 469

<212> DNA

<213> Eucalyptus grandis

<400> 698

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cgtgggtctt	gcgttggttg	tgggtctggg	cgcgggtgcg	aggtttgagg	agctctacca	180
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caactactct	ggcgctgggt	tcgggtcgaa	gagcaagtac	atgttcggca	aagttaccat	300
ccagatcaag	ctcgtcgagg	gcgactcggc	tgggaccgtc	actgctttct	acatgtcgtc	360
ggatggaccg	aaccacaacg	aattcgactt	cgagttcctg	ggcaacacga	caggggagcc	420

ctacctggta cagaccaacg tgtacgtgaa cgggggtgggc aaccgggag 469

<210> 699

<211> 347

<212> DNA

<213> Eucalyptus grandis

<400> 699

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aggcatcgag	ctcattgatt	ttccatgtgg	atccagagta	ggaagcgggc	cgcccgatct	120
cacaggagga	cgagcccgtg	gaccaggtgc	aggcagtggc	ctggaacttc	ctgtagtatg	180
ccgtgaaggg	cgctttcgac	cagtctgtct	tgatcagtcc	gcctctcgtg	gcccacatcat	240
cggcattcca	gaggctcgag	tatatatttca	tgggctgggt	cttggggaag	ggcacgccaa	300
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<210> 700

<211> 452

<212> DNA

<213> Eucalyptus grandis

<400> 700

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cgtgggtctt	gcgttggtgg	tgggtctggg	cgcgggtgcg	aggtttgagg	agctctacca	180
gccgggctgg	gctatggacc	attttgtcta	cgaaggagag	gttctcaagc	tcaagcttga	240
caactactct	ggcgctgggt	tcgggtcgaa	gagcaagtac	atgttcggca	aagttaccat	300
ccagatcaag	ctcgtcgagg	gcgactcggc	tgggaccgtc	actgctttct	acatgtcgtc	360
ggatggaccg	aaccacaacg	aattcgactt	cgagttcctg	ggcaacacga	caggggagcc	420
ctacctggta	cagaccaacg	tgtacgtgaa	cg			452

<210> 701

<211> 323

<212> DNA

<213> Eucalyptus grandis

<400> 701

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gagctgtaga	cgcccatggg	ctgggtccttc	gggtacggga	tgccccgggtg	ctccaagttg	180
gtgtgcacgc	ggatcgggtg	ctcgtccaca	agaaacacga	cttggcgctg	gtccagagga	240
cggagtagga	gtggaagtca	gtgggtgggg	cgaaccagag	gccgagcctc	tgctcccggg	300
tgcccacccc	gttcacgtac	acg				323

<210> 702

<211> 441

<212> DNA

<213> Eucalyptus grandis

<400> 702

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ttctgtagt	atgccgtgaa	gggcgctttc	gaccagtctg	tcttgatcag	tcgcctctc	180
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aagatgatgt	gctggggctt	ccagatgacg	gagtatgtgt	ggaaatttct	ggtgggggtca	360
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ggatgtaagg	gtcgccgctc	a				441

<210> 703
 <211> 345
 <212> DNA
 <213> Eucalyptus grandis

<400> 703
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 tgccccgggtg ctccaagttg gtgtgcacgc ggatcgggtgt ctggtccaca agaaacacga 180
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 ggccgagcct ctgctcccgg ttgcccaccc cgttcacgta cacgttggtc tgtaccaggt 300
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<210> 704
 <211> 339
 <212> DNA
 <213> Eucalyptus grandis

<400> 704
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 tgtgcacgcg gatcgggtgtc tcgtccacaa gaaacacgac ttggcgctgg ttccagagga 240
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 tgcccacccc gtcacgtaca cgttgggtctt taccaagta 339

<210> 705
 <211> 471
 <212> DNA
 <213> Eucalyptus grandis

<400> 705
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 gagctgtaga cggccatggg ctggtccttc ggggtacggga tgccccgggtg ctccaagttg 180
 gtgtgcacgc ggatcgggtgt ctggtccaca agaaacacga cttggcgctg gttccagagg 240
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 ttgcccaccc cgttcacgta cacgttggtc tgtaccaggt agggctcccc tgtcgtgttg 360
 cccaggaact cgaagtcgaa ttcgttgttg ttccgtccat ccgacgacat gtagaaagca 420
 gtgacgggtc cagccgagtc gccctcgacg agcttgatct ggatggtaac t 471

<210> 706
 <211> 484
 <212> DNA
 <213> Eucalyptus grandis

<400> 706
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 cacaggagga cgagcccgtg gaccaggtgc aggagtggtc ctggaacttc ctgtagtatg 180
 ccgtgaaggg cgctttcgac cagtctgtct tgatcagtc gcctctcgtg gcccaatcat 240
 cggcattcca gaggctcgag tatattttca tgggctgggt cttggggaag ggcacgcaa 300
 ttgactctcc attcttgaaa actctaata gaatgtgtgc taccaagaag atgatgtgct 360
 ggggcttcca gatgacggag tatgtgtgga aatttctggt ggggtcaaac cacaggtaga 420
 actgctgctc cctgttgccc ttcccttgag tgaagacgtt ggtgtggagg atgtaagggt 480
 cgcc 484

<210> 707
 <211> 317
 <212> DNA
 <213> Eucalyptus grandis

<400> 707
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 gtcgaaccag aggccgagcc tctgctccc gttgcccacc ccgttcacgt acacgttggt 180
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 gttcgggtcca tccgacgaca tgtagaaagc agtgacggtc ccagccgagt cgccctcnac 300
 gagcttgatc tggatgg 317

<210> 708
 <211> 367
 <212> DNA
 <213> Eucalyptus grandis

<400> 708
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 aagatgatgt gctggggctt ccagatgacg gagtatgtgt ggaaatttct ggtgggggtca 300
 aaccacaggt agaactgctg ctccctgttg cccttccctt gagtgaagac gttggtgtgg 360
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<210> 709
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 <212> DNA
 <213> Eucalyptus grandis

<400> 709
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<210> 710
 <211> 364
 <212> DNA
 <213> Eucalyptus grandis

<400> 710
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 ttgccacccc cgttcacgta cacgttggtc tgtaccagggt agggctcccc tgtcgtgttg 360
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<210> 711

<211> 338

<212> DNA

<213> Eucalyptus grandis

<400> 711

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acggagtagg	agtgggaagtc	agtgggtggg	tcgaaccaga	ggccgagcct	ctgctcccgg	300
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<210> 712

<211> 216

<212> DNA

<213> Eucalyptus grandis

<400> 712

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gatgatgtgc	tggggcttcc	agatgacgga	gtatgtgtgg	aaatttctgg	tgggggtcaa	180
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<210> 713

<211> 341

<212> DNA

<213> Eucalyptus grandis

<400> 713

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gagctgtaga	cgcccatggg	ctggtccttc	gggtacggga	tgccccgggtg	ctccaagttg	180
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<210> 714

<211> 413

<212> DNA

<213> Eucalyptus grandis

<400> 714

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ttgcccaccc	cgttcacgta	cacgttggtc	tgtaccaggt	agggctcccc	tgtcgtgttg	360
cccaggaact	cgaagtcgaa	ttcgttgttg	ttcgttccat	ccgacgacat	gta	413

<210> 715

<211> 280

<212> DNA

<213> Eucalyptus grandis

<400> 715

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gtcgaagagc	aagtacatgt	tcggcaaaga	taccatccag	atcaagctcg	tcgagggcga	180
ctcggctggg	accgncactg	ctttctacat	gtcgtcggat	ggaccgaacc	acaacgaatt	240
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<210> 716

<211> 397

<212> DNA

<213> Eucalyptus grandis

<400> 716

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ttgactctcc	attcttgaaa	actctaata	gaatgtgtgc	taccaagaag	atgatgtgct	360
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<210> 717

<211> 365

<212> DNA

<213> Eucalyptus grandis

<400> 717

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aagatgatgt	gctggggctt	ccagatgacg	gagtatgtgt	ggaaatttct	ggtgggggtca	300
aaccacaggt	agaactgctg	ctccctgttg	cccttccctt	gagtgaagac	gttggtgtgg	360
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<210> 718

<211> 301

<212> DNA

<213> Eucalyptus grandis

<400> 718

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ttcctgtagt	atgccgtgaa	gggcgctttc	gaccagtctg	tcttgatcag	tccgcctctc	180
gtggcccaat	catcggcatt	ccagaggctc	gagtatatct	tcatgggctg	gttcttgggg	240
aagggcacgc	caattgactc	tccattcttg	aaaactctaa	taggaatggt	gtctaccaag	300
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<210> 719

<211> 383

<212> DNA

<213> Eucalyptus grandis

<400> 719

cgcttccggc	cataggcatc	gagctcattg	atthttccatg	tggatccaga	gtaggaagcg	60
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ttcctgtagt	atgccgtgaa	gggcgctttc	gaccagtctg	tcttgatcag	tccgcctctc	180
gtggcccaat	catcggcatt	ccagaggctc	gagtatatct	tcatgggctg	gttcttgggg	240
aagggcacgc	caattgactc	tccattcttg	aaaactctaa	taggaatggt	gtctaccaag	300

aagatgatgt gctggggctt ccagatgacg gagtatgtgt ggaaatttct ggtgggggtca 360
aaccacaggt agaactgctg etc 383

<210> 720
<211> 370
<212> DNA
<213> Eucalyptus grandis

<400> 720
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catgcagctc aagctcgtcg ccgggaactc cgccggcacc gtgaccgctt actacttgtc 120
ttcgcaaggg ccaactcacg atgagattga cttcgagttc ctggggaacc tgagcggcga 180
cccttacatc ctccacacca acgtcttcac tcaagggaag ggcaacaggg agcagcagtt 240
ctacctgtgg tttgacccca ccagaaattt ccacacatac tccgtcatct ggaagcccca 300
gcacatcatc ttcttggtag acaacattcc tattagagtt ttcaagaatg gagagtcaat 360
tggcgtgccc 370

<210> 721
<211> 413
<212> DNA
<213> Eucalyptus grandis

<400> 721
ggcggccgag gaagaagggc aagtggaggc tccgttggac cagacgcaag cgctcgcgtt 60
gaagccgctg aaggaggcgg tgaaaggcgc ctgcgaccag tcagtcttca cgaggccgcc 120
ccgggtggcc cagtcctcag cgtcccatag ggtcgagtag agggtcagtg gctggctctt 180
tgggtagggg acccccgcgg catccaagtt cttgaactcc attattggaa tcccatcgac 240
aaagtacctg ttttttttag cagaaagaga tccgtcattc attatgtggc gaaggacctc 300
aaatcggtgt tatttttagaa ggaaatttat ttgttcaaag gttttcatga tcaggacgag 360
gagtacttac acgacgtgta aagggttcca aaggacggag taagtgtgga aat 413

<210> 722
<211> 393
<212> DNA
<213> Eucalyptus grandis

<400> 722
ttacattcgg acgggtcgac ctgggatgag atagacttgg agttcttggg gaacttgagc 60
ggcgaccctt atatcctcca caccaacttg tacagccaag gcaaaggcaa tagggagcag 120
caattctatc tctggttcga cccgacagct gatttccaca cttactccgt cctttggaac 180
cctttacacg tcgtgtactt tgtcgatggg attccaataa gggagttaa gaacttggtat 240
gcggcggggg tcccctaccc aaagagccag cccatgaccc tctactcgac cctatgggac 300
gctgaggact gggccacccg gggcggcctc gtgaagactg actggtcgca ggcgcctttc 360
accgcctcct tcagcggcct caacgcgagc gct 393

<210> 723
<211> 244
<212> DNA
<213> Eucalyptus grandis

<400> 723
gcaataggga gcagcaattc tatctctggt tcgacccgac agctgatttc cacacttact 60
ccgtcctttg gaacccttta cacgtcgtgt actttgtcga tgggattcca ataaggaggt 120
tcaagaactt ggatgcggcg ggggtcccct acccaaagag ccagcccatg accctctact 180
cgaccctatg ggacgctgag gactgggcca cccggggcgg cctcgtgaag actgactggt 240
cgca 244

<210> 724
 <211> 238
 <212> DNA
 <213> Eucalyptus grandis

<400> 724
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 gaccagccca tgggcgctcta cagctcgata tggaaacgccg acgactgggc caccagggc 120
 ggccgcatca agaccgactg gaccacgcc cccttcatca cgtcctaccg taacttcgag 180
 atcgacgcgt gcgagtggcc ggcgaccatg gcggcggcag acaacgcaa gcggtgca 238

<210> 725
 <211> 453
 <212> DNA
 <213> Eucalyptus grandis

<400> 725
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 atggccgtgc gcagataccc agcagtggcc agctcctcac gctgtccctg gacaagacgt 120
 cgggggtcggg cttccgggtcc aagaagcagt acttggtcgg gaagattgac atgcagctca 180
 aactcgtgcc tgggaactcc gccggcaccg tcaccgctta ttacctttct tctttgggtt 240
 ctgcgcacga cgaaatcgac ttcgagtttc tcggtaacct gagcggcgac ccgtacaccc 300
 tccatacgaa cgtgttcacg caaggaaaag gaaacagaga acaacagttc catctctggt 360
 tcgacccac caaggacttc cacacctact ccatcctgtg gaacctcaa agcatcatct 420
 tctctgtcga tggaaacgcc ataagagagt tca 453

<210> 726
 <211> 334
 <212> DNA
 <213> Eucalyptus grandis

<400> 726
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 gatgaaattg tactccagcc tgtggaatgc ggatgactgg gccactcggg gagggcttga 120
 gaagaccgac tgggtccaagg cgcggttcgt ggctctttac cgggggttcc acatcgacgg 180
 gtgcgaagcg tcggttgagg ccaagttctg cgctactcag ggccagaggt ggtgggacca 240
 gaaggagttc caggacctcg atgccttcca gtaccggagg ctccggtggg tgcgctcgaa 300
 atacaccatc tacaactact gcgctgtcgg aaga 334

<210> 727
 <211> 416
 <212> DNA
 <213> Eucalyptus grandis

<400> 727
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 ttcttgggga acttgagcgg cgatccatac attctccaca ccaacgtctt cagccaaggc 120
 aagggttaacc gagagcagca attctatctc tgggttcgacc caactgctga ttccacaccc 180
 tactccatcc tctggaatcc acaacgcac atgtaagagt ctgaaaagct caaaatgcga 240
 ccttacttg atttacattg cgctacacta ttctctgcgg catttactca aatacctttg 300
 tttgcgatca ttgcagattc tcagtggacg ggactcccat cagagagttc aagaacgcag 360
 agtccatcgg tggtcctttc ccaaggccca gccatgagg atattcttcg agccct 416

<210> 728
 <211> 375
 <212> DNA
 <213> Eucalyptus grandis

<400> 728

acaaaacgcg	cccaatatgg	cctctcgttc	cacttcttcg	ctttgtagag	ctgcgcttct	60
tctcatggtc	gtttcttggg	cgacttctgc	ttccgccccg	aacttctatc	aagacttcga	120
cataacctgg	ggagatggcc	gaggtcagat	cctcaacaat	ggcgacctcc	tcactctctc	180
ccttgacaag	gcctccggct	ccggcttcca	gtccaagaac	gagtacttgt	tcggcaagat	240
tgacatgcag	ctcaaacttg	ttcctggcaa	ctctgctggc	accgtcaccg	catactatct	300
atcttcaa	gggtcgcacg	gggacgagat	agatttcgag	ttcttgggga	atttaagtgg	360
cgatccgtac	attct					375

<210> 729

<211> 538

<212> DNA

<213> Eucalyptus grandis

<400> 729

agaaggagta	cctgttcggc	cggatcgaca	tgcagctcaa	gctcgtcgcc	gggaactccg	60
ccggcaccgt	gaccgcttac	tacttgctct	cgcaagggcc	aactcacgat	gagattgact	120
tcgagttcct	ggggaacctg	agcggcgacc	cttacatcct	ccacaccaac	gtcttcactc	180
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acacatactc	cgatcatctg	aagccccagc	acatcatctt	cttggttagac	aacattccta	300
ttagagtttt	caagaatgga	gagtcaattg	gcgtgccctt	ccccaagaac	cagcccatga	360
aaatatactc	gagcctctg	aatgccgatg	attgggccac	gagaggcgga	ctgatcaaga	420
cagactgggtc	gaaatcgccc	ttcacggcat	actacaggaa	gttccaggcc	actgcctgca	480
cctgggtccac	gggctcgtcc	tcctgtgaga	tcggacggcc	cgcttcctac	tctggatc	538

<210> 730

<211> 412

<212> DNA

<213> Eucalyptus grandis

<400> 730

ccggatcgac	atgcagctca	agctcgttgc	cggaactcc	gccggcaccg	tgaccgctta	60
ctacttgctc	tcgcaagggc	caactcacga	cgagatcgac	ttcgagttcc	tggggaacct	120
gagcggcgac	ccttacatcc	tcacaccaa	cgtcttcact	caagggaaag	gcaacaggga	180
gcagcagttc	tacctgtggt	ttgacccac	caggaatttc	cacacatact	ccgtcatctg	240
gaagccccag	cacatcatct	tcttggtaga	caacattcct	attagagttt	tcaagaatgg	300
agagtcaatt	ggcgtgccct	tccccaagaa	ccagcccatg	aaaatatact	cgagcctctg	360
gaatgccgat	gattgggcca	cgagaggcgg	ctgatcaaga	cagactgggtc	ga	412

<210> 731

<211> 350

<212> DNA

<213> Eucalyptus grandis

<400> 731

acaccgatcc	gcgtgcacac	caacttggag	caccggggca	tcccgtaccc	gaaggaccag	60
cccattggcg	tctacagctc	gatatggaac	gccgacgact	gggccaccca	gggcggccgc	120
atcaagaccg	actggaccca	cgcccccttc	atcacgtcct	accgtaactt	cgagatcgac	180
gcgtgcgagt	gcccggcgac	catggcggcg	gcagacaacg	ccaagcgggtg	cagcagcgcc	240
ggcagggaga	ggcggtagtg	gtgggacgag	cccacgggtg	ccgagctgag	cctccaccag	300
aaccaccagc	tcaagtgggt	ccaggccccc	cacatgggtc	acgactactg		350

<210> 732

<211> 354

<212> DNA

<213> Eucalyptus grandis

<400> 732

ctcctgtcgc	tgtccctcga	cagagtgtcg	gggtcgggct	tccgggtccaa	gaaggagtac	60
ctgttcggcc	ggatcgacat	gcagctcaag	ctcgtcgccg	ggaactccgc	cggcaccgtg	120
accgcttact	acttgtcttc	gcaagggcca	actcacgatg	agattgactt	cgagttcctg	180
gggaacctga	gcggcgaccc	ttacatcctc	cacaccaacg	tcttcactca	agggaagggc	240
aacagggagc	agcagttcta	cctgtgggtt	gacccacca	gaaatttcca	cacatactcc	300
gtcatctgga	agccccagca	catcatcttc	ttggtagcaa	cattcctatt	agag	354

<210> 733

<211> 480

<212> DNA

<213> Eucalyptus grandis

<400> 733

cccacatctc	tccctcctct	tcagtcctca	ctctcatatc	atctttgctt	ctcttcagca	60
actacagcag	cagcagaaa	acagacagaa	cacgccaat	atggccttcc	cttctacttc	120
ctcactttgc	atcactacac	tgcttctcgt	ggtcgtttct	tgggcgacgt	ctgcttcgcg	180
ccgcaacttc	tatcaagact	tcgacataac	ctgggggtgat	ggccgagctc	agatcctcaa	240
caacggcgac	ctcctcactc	tctcccttga	caaggcctcc	ggctctgggt	tccagtccaa	300
gaacgagtac	ttgttcggca	agattgacat	gcagctcaag	ctcgttcccg	gcaactccgc	360
aggcactgtc	accgcatact	atcttatctc	aatgggtcgc	acgtgggacg	agatagactt	420
cgagttcttg	gggaacttga	gcggcgatcc	atacattctt	cacaccaacg	tgttcagcca	480

<210> 734

<211> 343

<212> DNA

<213> Eucalyptus grandis

<400> 734

ccgcgtcaag	gtactggata	acggccagct	cgtcaccctt	tccctggaca	aggcctctgg	60
ctccggcttc	aagtccaaga	accagtacct	ctatggcaaa	ttcgacatgc	aaatcaagct	120
cgccccggc	aactccgcgg	gcactgtcac	caccttatac	ttacattcgg	acgggtcgac	180
ctgggatgag	atagacttgg	agttcttggg	gaacttgagc	ggcgaccctt	atatactcca	240
caccaacttg	tacagccaag	gcaaaggcaa	tagggagcag	caattctatc	tctgggttga	300
cccagacagct	gatttccaca	cttactccgt	cctttggaac	cct		343

<210> 735

<211> 359

<212> DNA

<213> Eucalyptus grandis

<400> 735

atccaagggg	tcttacctgt	tcgggcattt	cagcatggac	atcaagttgg	ttgctggaga	60
ttctgcaggg	acagtcaactg	cattctacct	ctcatctcaa	aactcagagc	acgacgaaat	120
agactttgag	ttcttgggta	acaggagtgg	gcagccgtac	atagtgcaga	ccaatgtgtt	180
cacgggagga	aaaggagaca	gagaacagag	gatttatctt	tggttcgatc	ccaccgccgc	240
ctaccactcc	tactctgttc	tctggaacat	gtaccagatt	gtattcttcg	tggatgacgt	300
gccgatccgg	gtgttcaaga	acagcaagga	ccttgggggtg	aaattcccct	tcaaccagc	359

<210> 736

<211> 360

<212> DNA

<213> Eucalyptus grandis

<400> 736

gcatactatt	tatcttcaaa	tgggtcaacg	tgggacgaga	tagacttcga	gttcttgggg	60
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aacttgagcg	gcgatcccta	cattcttcac	accaacgtgt	tcagccaagg	caagggcaac	120
cgagagcagc	aattctatct	ctggttcgac	ccaactgctg	atttccacac	ctactccatc	180
ctctggaatc	cacaacgcat	catattctca	gtggacggga	ctccgatcag	agagttcaag	240
aacgcagagt	ccatcggtgt	tcctttcccc	aaggcccagc	ccatgaggat	attctcgagc	300
ctctggaacg	cagacgactg	ggcgaccaga	ggcggcctag	tgaagacgga	cttgagcgca	360

<210> 737

<211> 437

<212> DNA

<213> Eucalyptus grandis

<400> 737

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atggctgtcc	tggctctttc	caaagtgtct	gtgtcgttcg	gcctgttcgt	gggtcttgcg	120
ttgttggtgg	gtctggtcgc	gggtgcgagg	tttgaggagc	tctaccagcc	gggctgggct	180
atggaccatt	ttgtctacga	aggagaggtt	ctcaagctca	agcttgacaa	ctactctggc	240
gctgggttcg	ggtcgaagag	caagtacatg	ttcggcaaag	ttaccatcca	gatcaagctc	300
gtcgagggcg	actcggtcgg	gaccgtcact	gctttctaca	tgtcgtcgga	tggaccgaac	360
cacaacgaat	tgcacttcga	gttcctgggc	aacacgacag	gggagcccta	cctggtacag	420
accacgtgtc	cgtgacg					437

<210> 738

<211> 341

<212> DNA

<213> Eucalyptus grandis

<400> 738

ggcgaccctt	acatcctcca	caccaacgtc	ttcactcaag	ggaagggcaa	cagggagcag	60
cagttctacc	tgtggtttga	ccccaccagg	aatttccaca	catactccgt	catctggaag	120
ccccagcaca	tcatcttctt	ggtagacaac	attcctatta	gagttttcaa	gaatggagag	180
tcaattggcg	tgcccttccc	caagaaccag	cccatgaaaa	tatactcgag	cctctggaat	240
gccgatgatt	gggccacgag	aggcggactg	atcaagacag	actggtcgaa	agcgcccttc	300
acggcatact	acaggaagtt	ccaggccact	gcctgcacct	g		341

<210> 739

<211> 497

<212> DNA

<213> Eucalyptus grandis

<400> 739

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cctgacgtgg	ggtggcagcg	accgcgccaa	gatcttcagc	gggggtcagc	tcctgtcgtc	120
gtccctcgac	agagtgtcgg	ggtcgggctt	ccggtccaag	aaggagtacc	tgttcggccg	180
gatcgacatg	cagctcaagc	tcgttgccgg	gaactccgcc	ggcacctga	ccgcttacta	240
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cggcgaccct	tacatcctcc	acaccaacgt	cttactcaa	gggaagggca	acagggagca	360
gcagttctac	ctgtggtttg	accccaccag	gaatttccac	acatactccg	tcatctggaa	420
gccccagcac	atcatcttct	tggtagacaa	cattcctatt	agagttttca	agaatggaga	480
gtcaattggc	gtgccct					497

<210> 740

<211> 497

<212> DNA

<213> Eucalyptus grandis

<400> 740

ccaagaagga	gtacctgttc	ggccggatcg	acatgcagct	caagctcgtc	gccgggaact	60
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ccgccggcac	cgtgaccgct	tactacttgt	cttcgcaagg	gccaaactcac	gatgagattg	120
acttcgagtt	cctgggggaa	ctgagcggcg	acccttacat	cctccacacc	aacgtcttca	180
ctcaagggaa	gggcaaacagg	gagcagcagt	tctacctgtg	gtttgacccc	accagaaatt	240
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ctattagagt	tttcaagaat	ggagagtcaa	ttggcgtgcc	cttccccaa	aaccagccca	360
tgaaaatata	ctcgagcctc	tggaaatgcc	atgattgggc	cacgagaggc	ggactgatca	420
agacagactg	gtcgaaatcg	ccttacggat	actacagaag	ttcaggccac	tgctgacctg	480
gccacgggct	gtctctg					497

<210> 741

<211> 395

<212> DNA

<213> Eucalyptus grandis

<400> 741

cgcaactttt	atcaagactt	tttcataacc	tgggggagat	ggccgagctc	agatcctcaa	60
caatggcgac	ctcctcactc	tctcccttga	caaggcctcc	ggctccggct	tccagtccaa	120
gaacgagtac	ttgttcggca	agattgacat	gcagctcaag	ctcgttcctg	gcaactccgc	180
aggcactgtc	accgcatact	atztatcttc	aaatgggtca	acgtgggacg	agattgactt	240
cgagttcttg	gggaacttga	gcggcgatcc	ctacattctt	cacaccaacg	tgttcagcca	300
aggcaagggc	aaccgagagc	agcaattcta	tctctgggtc	gacccaactg	ctgatttcca	360
cacctactcc	atcctctgga	atccacaacg	catta			395

<210> 742

<211> 396

<212> DNA

<213> Eucalyptus grandis

<400> 742

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gaagccgctg	aaggaggcgg	tgaaaggcgc	ctgcgaccag	tcagtcttca	cgaggccgcc	120
ccgggtggcc	cagtctcag	cgtcccatag	ggtcgagtag	agggtcatgg	gctggctctt	180
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aaagtacctg	tttttttttag	cagaaagaga	tccgtcattc	attatgtggc	gaaggacctc	300
aaatcggtgt	tatttttagaa	ggaaatttat	ttgtcaaagg	ttttcatgat	caggacgagg	360
agtacttaca	cgacgtgtaa	agggttccaa	aggacg			396

<210> 743

<211> 347

<212> DNA

<213> Eucalyptus grandis

<400> 743

caccacctta	tacttacatt	cggacgggtc	gacctgggat	gagatagact	tggagttctt	60
ggggaacttg	agcggcgacc	cttatatcct	ccacaccaac	ttgtacagcc	aaggcaaagg	120
caatagggag	cagcaattct	atctctggtt	cgacccgaca	gctgatttcc	acacttactc	180
cgtcctttgg	aaccctttac	acgtcgtgta	ctttgtcgat	gggattccaa	taaggaggtt	240
caagaacttg	gatgcggcgg	gggtccccta	cccaaagagc	cagcccatga	ccctctactc	300
gaccctatgg	gacgctgagg	actggggccac	ccggggcggc	ctcgtga		347

<210> 744

<211> 446

<212> DNA

<213> Eucalyptus grandis

<400> 744

gtcaaggtac	tggataacgg	ccagctcgtc	accctttccc	tggacaaggc	ctctggctcc	60
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ggcttcaagt	ccaagaacca	gtacctctat	ggcaaattcg	acatgcaa	caagctcgtc	120
cccggaact	ccgcgggcac	tgtcaccacc	ttatacttac	attcggacgg	gtcgacctgg	180
gatgagatag	acttggagtt	cttgggggaac	ttgagcggcg	acccttatat	cctccacacc	240
aacttgtaca	gccaaggcaa	aggcaatagg	gagcagcaat	tctatctctg	gttcgacctg	300
acagctgatt	tccacactta	ctccgtcctt	tggaaaccctt	tacacgtcgt	gtactttgtc	360
gatgggattc	caataaggga	gttcaagaac	ttggatgcgg	cgggggtccc	ctacccaaag	420
agccagccca	tgaccctcta	ctcgac				446

<210> 745

<211> 439

<212> DNA

<213> Eucalyptus grandis

<400> 745

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atagagcaat	catggccccat	gaagggtggag	gtcctagtgc	ttcctccatg	gtgggtgctcg	120
tgagcttgct	gctgatggct	gccgcttcgc	ccgcagctgg	gaacttctac	caggacttctg	180
acctgacgtg	gggtggcagc	gaccggggcca	agatcttcag	cgggggtcag	ctcctgtcgc	240
tgccccctga	cagagtgtcg	gggtcgggct	tccggtccaa	gaaggagtac	ctgttcggcc	300
ggatcgacat	gcagctcaag	ctcgtcgccg	ggaactccgc	cggcaccgtg	accgcttact	360
acttgtcttc	gcaagggcca	actcacgatg	agattgactt	cgagttcctg	gggaacctga	420
gcgngnagcc	ttacatcct					439

<210> 746

<211> 322

<212> DNA

<213> Eucalyptus grandis

<400> 746

acgacgagat	cgacttcgag	ttcctgggga	acctgagcgg	cgacccttac	atnctccaca	60
ccaacgtctt	cactcaaggg	aagggcaaca	gggagcagca	gttctacctg	tggtttgacc	120
ccaccaggaa	tttccacaca	tactccgtca	tctggaagcc	ccagcacatc	atcttcttgg	180
tagacaacat	tcctattaga	gttttcaaga	atggagagtc	aattggcgtg	cccttcccca	240
agaaccagcc	catgaaaata	tactcgagcc	tctggaatgc	cgatgattgg	gccacgagag	300
gcggactgat	caagacagac	tg				322

<210> 747

<211> 433

<212> DNA

<213> Eucalyptus grandis

<400> 747

tggacaaggc	ctctggctcc	ggcttcaagt	ccaagaacca	gtacctctat	ggcaaattcg	60
acacgcaaat	caagctcgtc	cccggaact	ccgcgggcac	tgtcaccacc	ttatacttac	120
attcggacgg	gtcgacctgg	gacgagatag	acttggagtt	cttgggggaac	ttgagcggcg	180
acccttatat	cctccacacc	aacttgtaca	gccaaggcaa	aggcaatagg	gagcagcaat	240
tctatctctg	gttcgacctg	acagctgatt	tccacactta	ctccgtcctt	tggaaaccctt	300
tacacgtcgt	gtactttgtc	gatgggattc	caataaggga	gttcaagaac	ttggatgcgg	360
cgggggtccc	ctacccaaag	agccagccca	tgaccctcta	ctcgacccta	tgggacgctg	420
aggactgggc	cac					433

<210> 748

<211> 525

<212> DNA

<213> Eucalyptus grandis

<400> 748

aacagagcga	cttcagagct	cgtgaagaaa	agcttttctg	ctcgtctctc	ttctttctct	60
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ggtcttgctg	tgttggtggg	tctggctcgc	ggtgctgaggt	ttgaggagct	ctaccagccg	180
ggctgggcta	tggaccattt	tgtctacgaa	ggagaggttc	tcaagctcaa	gcttgacaac	240
tactctggcg	ctgggttcgg	gtcgaagagc	aagtacatgt	tggcaaagt	taccatccag	300
atcaagctcg	tcgagggcga	ctcggctggg	accgncactg	ccttctacat	gtcgtcggat	360
ggaccgaacc	acaacgaatt	cgacttcgag	ttcctgggca	acacgacagg	ggagccctac	420
ctggtacaga	ccaacgtgta	cgtgaacggg	gtgggcaacc	gggagcagag	gctcggcctc	480
tggttcgacc	ccaccactga	cttccactcc	tactccgtcc	tctgg		525

<210> 749

<211> 385

<212> DNA

<213> Eucalyptus grandis

<400> 749

cgtgagcttg	ctgctgatgg	ctgccgcttc	gcccgcagct	gggaacttct	accaggactt	60
cgacctgacg	tggggtggca	gcgaccgggc	caagatcttc	agcgggggtc	agctcctgtc	120
gctgtccctc	gacagagtgt	cggggtcggg	cttccggctc	aagaaggagt	acctgttcgg	180
ccggatcgac	atgcagctca	agctcgtcgc	cgggaactcc	gccggcaccg	tgaccgctta	240
ctacttgtct	tcgcaagggc	caactcacga	cgagatcgac	ttcgagttcc	tggggaacct	300
gagcggcgac	ccttacatcc	tccacaccaa	cgtcttcact	caagggaagg	gcaacagggg	360
gcagcagttc	tacctgtggg	ttgac				385

<210> 750

<211> 519

<212> DNA

<213> Eucalyptus grandis

<400> 750

caaacaccca	cagctcttcc	tctctctccc	tcagtgtctc	ctcttcagtc	ctcactctca	60
tatcatctca	ttggcatttg	catctcttca	gcaactacag	cgcagcagc	agcagcaaaa	120
aacaaaacac	gccccatatg	gcctctcggt	ccacttcttc	gctttgtacc	accgcgcttc	180
ttctcctggg	cgtttcttgg	gcagcatccg	cttttgcccg	caacttctac	caagacttcg	240
acataacctg	gggagatggc	cgagctcaga	tcctcaatag	tggcgacctc	ctcactcttt	300
ccctcgacaa	ggcctccggc	tccggcttcc	agtccaagaa	cgagtacctg	tttggaaga	360
ttgacatgca	actcaagctc	gttcccggca	actccgcagg	caccgtcacc	gcttactatt	420
tatcttcaaa	cgggtcgacg	tgggacgaga	tagacttcga	gttcttgggg	aacttgagcg	480
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<210> 751

<211> 342

<212> DNA

<213> Eucalyptus grandis

<400> 751

cgtgagcttg	ctgctgatgg	ctgccgcttc	gcccgcagct	gggaacttct	accaggactt	60
cgacctgacg	tggggtggca	gcgaccgggc	caagatcttc	agcgggggtc	agctcctgtc	120
gctgtccctc	gacagagtgt	cggggtcggg	cttccggctc	aagaaggagt	acctgttcgg	180
ccggatcgac	atgcagctca	agctcgtcgc	cgggaactcc	gccggcaccg	tgaccgctta	240
ctacttgtct	tcgcaagggc	caactcacga	cgagatcgac	ttcgagttcc	tggggaacct	300
gagcggcgac	ccttacatcc	tccacaccaa	cgtcttcact	ca		342

<210> 752

<211> 416

<212> DNA

<213> Eucalyptus grandis

<400> 752

gagaaacaga	gcgacttcag	agctcgtgaa	gaaaagcttt	tgctctcgct	cttcttcttc	60
ttcttcttct	tcttcaatgg	ctgtcccggg	cttttccaaa	gtgtctgtgt	cgttcggcct	120
gttcgtgggt	cttgcgttgt	tgggtgggtct	ggtcgcgggt	gcgaggtttg	aggagctcta	180
ccagccgggc	tgggctatgg	accattttgt	ctacgaagga	gaggttctca	agctcaagct	240
tgacaactac	tctggcgctg	ggttcgggtc	gaagagcaag	tacatgttcg	gcaaagttac	300
catccagatc	aagctcgtcg	agggcgactc	ggctggggacc	gtcactgctt	tctacatgtc	360
gtcngatgga	ccgaaccaca	acgaattcga	cttcgagttc	ctgggcaaca	cgaaca	416

<210> 753

<211> 408

<212> DNA

<213> Eucalyptus grandis

<400> 753

agcgacttca	gagctcgtga	agaaaagctt	ttgctctcgc	tcttcttctt	cttcttcttc	60
ttcttcaatg	gctgtcccgg	tcttttccaa	agtgtctgtg	tcgttcggcc	tggtcgtggg	120
tcttgcggtg	ttgggtgggtc	tggtcgcggg	tgcgagggtt	gaggagctct	accagccggg	180
ctgggctatg	gaccattttg	tctacgaagg	agagggttctc	aagctcaagc	ttgacaacta	240
ctctggcgct	gggttcgggt	cgaagagcaa	gtacatgttc	ggcaaagtta	ccatccagat	300
caagctcgtc	gagggcgact	cggctgggac	cgctactgct	ttctacatgt	cgtcggatgg	360
accgaaccac	aacgaattcg	acttcgagtt	cctgggcaac	acgaacag		408

<210> 754

<211> 401

<212> DNA

<213> Eucalyptus grandis

<400> 754

gagaaacaga	gcgacttcag	agctcgtgaa	gaaaagcttt	tgctctcgct	cttcttcttc	60
ttctcttctt	cttcaatggc	tgtcccgggc	ttttccaaag	tgtctgtgtc	gttcggcctg	120
ttcgtgggtc	ttgcgttggt	ggtgggtctg	gtcgcgggtg	cgaggtttga	ggagctctac	180
cagccgggct	gggctatgga	ccattttgtc	tacgaaggag	aggttctcaa	gctcaagctt	240
gacaactact	ctggcgctgg	gttcgggtcg	aagagcaagt	acatgttcgg	caaagttacc	300
atccagatca	agctcgtcga	gggcgactcg	gctgggaccg	tcactgcttt	ctacatgtcg	360
tcggatggac	cgaaccacaa	cgaattcgac	ttcgagttct	g		401

<210> 755

<211> 403

<212> DNA

<213> Eucalyptus grandis

<400> 755

gcgacttcag	agctcgtgaa	gaaaagcttt	tgctctcgct	cttcttcttc	ttcttcttct	60
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cttgcgttgt	tgggtgggtct	ggtcgcgggt	caaggtttga	ggagctctac	cagccgggct	180
gggctatgga	ccattttgtc	tacgaaggag	aggttctcaa	gctcaagctt	gacaactact	240
ctggcgctgg	gttcgggtcg	aagagcaagt	acatgttcgg	caaagttacc	atccagatca	300
agctcgtcga	gggcgactcg	gctgggaccg	tcactgcttt	ctacatgtcg	tcggatggac	360
cgaaccacaa	cgaattcgac	ttcgagttcc	tgggcacacg	aca		403

<210> 756

<211> 414

<212> DNA

<213> Eucalyptus grandis

<400> 756

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ttcttcttct	tcttcaatgg	ctgtcccggg	cttttccaaa	gtgtctgtgt	cggttcggcct	120
gttcgtgggt	cttgcgttgt	tggtgggtct	ggtcgcgggt	gcgaggtttg	aggagctcta	180
ccagccgggc	tgggctatgg	accattttgt	ctacgaagga	gaggttctca	agctcaagct	240
tgacaactac	tctggcgctg	ggttcgggtc	gaagagcaag	tacatgttcg	gcaaagttac	300
catccagatc	aagctcgtcg	agggcgactc	ggctgggacc	gtcactgctt	tctacatgtc	360
gtcggatgga	ccgaaccaca	acgaattcga	cttcgagttc	ctggcaacac	gaca	414

<210> 757

<211> 441

<212> DNA

<213> Eucalyptus grandis

<400> 757

tgaaaatata	ctcgagcctc	tggaatgccg	atgattgggc	cacgagaggc	ggactgatca	60
agacagactg	gtcgaaaagcg	cccttcacgg	catactacag	gaagttccag	gccaccgcct	120
gcacctgggtc	cacgggctcg	tcgtcctgcg	agatcggacg	gcccgcctcc	tactctggat	180
ccacatggaa	aatcaatgag	ctcgatgcct	atggccggag	gcggctcagg	tgggtccaga	240
agtacttcat	gatctacgac	tactgcgcgg	acggcaagag	gttccctcaa	ggcatcccag	300
ccgaatgcaa	gcgctcgca	ttctagaaaa	gaaaaagagg	gaaatcaacg	tgttcgaatg	360
gaaggtcgct	cggcagtata	tagttaatgc	attctttcgt	ttcgtttcgc	atgttcaagt	420
catgacttgc	tcgtggtgtc	t				441

<210> 758

<211> 499

<212> DNA

<213> Eucalyptus grandis

<400> 758

gcgacttcag	agctcgtgaa	gaaaagcttt	tgctctcgct	cttcttcttc	ttcttcttct	60
tcttcaatgg	ctgtcccggg	cttttccaaa	gtgtctgtgt	cggttcggcct	gttcgtgggt	120
cttgcgttgt	tggtgggtct	ggtcgcgggt	gcgaggtttg	aggagctcta	ccagccgggc	180
tgggctatgg	accattttgt	ctacgaagga	gaggttctca	agctcaagct	tgacaactac	240
tctggcgctg	ggttcgggtc	gaagagcaag	tacatgttcg	gcaaagttac	catccagatc	300
aagctcgtcg	agggcgactc	ggctgggacc	gtcactgctt	tctacatgtc	gtcggatgga	360
ccgaaccaca	acgaattcga	cttcgagttc	ctgggcaaca	cgacagggga	gccctacctg	420
gtacagacca	acgtgtacgt	gaacgggggtg	ggcaaccggg	aacagaggct	cggcctctgg	480
ttcgacccca	ccactgact					499

<210> 759

<211> 340

<212> DNA

<213> Eucalyptus grandis

<400> 759

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ggcatcctgt	ggaccgactc	tcaaatacata	ttttatgtgg	acaatgtacc	catcagagag	120
tttaagagaa	cggaggctat	gggaggccaa	ttccctctca	aacctatgtc	tttatacgcc	180
acaatctggg	atggctctga	ttgggccaca	aatggcgga	aataccgagt	gaactacaag	240
tacgccccct	acgtcgccaa	gttctctgat	cttgtcctgc	acggctgcgc	agttgacccg	300
attgagcacc	aattaagctg	caacgatgtc	ccaagtcata			340

<210> 760

<211> 350

<212> DNA

<213> Eucalyptus grandis

<400> 760

tcttggtaga	caacattcct	attagagttt	tcaagaatgg	agagtcaatt	ggcgtgccct	60
tccccaagaa	ccagcccatg	aaaatatact	cgagcctctg	gaatgccgat	gattgggcca	120
cgagaggcgg	actgatcaag	acagactggg	cgaaagcgcc	cttcacggca	tactacagga	180
agttccaggc	caccgcctgc	acctgggtcca	cgggctcgtc	gtcctgcgag	atcggacggc	240
ccgcttcccta	ctctggatcc	acatggaaaa	tcaatgagct	cgatgcctat	ggccggaggc	300
ggctcangtg	ggtccagaag	tacttcatga	tctacgacta	ctgcgcggac		350

<210> 761

<211> 288

<212> DNA

<213> Eucalyptus grandis

<400> 761

cttgtggacg	agacaccgat	ccgcgtgcac	accaacttgg	agcaccgggg	catcccgtac	60
ccgaaggacc	agcccatggg	cgtctacagc	togatatgga	acgcgcacga	ctggggccacc	120
cagggcggcc	gcatcaagac	cgactggacc	cacgccccct	tcatcacgtc	ctaccgtaac	180
ttcgagatcg	acgcgtgcga	gtgcccggcg	accatggcgg	cggcagacaa	cgccaagcgg	240
tgcagcagcg	ccggcagggg	gagggcgtac	tggtgggacg	agcccacg		288

<210> 762

<211> 364

<212> DNA

<213> Eucalyptus grandis

<400> 762

ttgacttcga	gttcctgggg	aacctgagcg	gcgaccctta	catcctccac	accaacgtct	60
tcactcaagg	gaagggcaac	agggagcagc	agttctacct	gtggtttgac	cccaccagaa	120
atttccacac	atactccgtc	atctggaagc	cccagcacat	catcttcttg	gtagacaaca	180
ttcctattag	agttttcaag	aatggagagt	caattggcgt	gcccttcccc	aagaaccagc	240
ccatgaaaat	atactcgagc	ctctggaatg	ccgatgattg	ggccacgaga	ggcggactga	300
tcaagacaga	ctggtcgaaa	tcgcccttca	cggcatacta	caggaagtgc	caggccactg	360
cctg						364

<210> 763

<211> 343

<212> DNA

<213> Eucalyptus grandis

<400> 763

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gagcagaggc	tcggctctgg	ttcgacccca	ccactgactt	ccactcctac	tccgtcctct	120
ggaaccagcg	ccaagtcgtg	tttcttgttg	acgagacacc	gateccgctg	cacaccaact	180
tggagcaccg	gggcatcccg	taccgaagg	accagcccat	gggcgtctac	agctcgatat	240
ggaacgcgca	cgactgggcc	acccanggcg	gccgcaccaa	gaccgactgg	acccacgccc	300
ccttcatcac	gtcctaccgt	aacttcgaga	tcgacgcgtg	cga		343

<210> 764

<211> 301

<212> DNA

<213> Eucalyptus grandis

<400> 764

cgctactgct	ttctacatgt	cgtcggatgg	accgaaccac	aacgaattcg	acttcgagtt	60
cctgggcaac	acgacagggg	agccctacct	ggtacagacc	aacgtgtacg	tgaacggggg	120
gggcaaccgg	gagcagaggc	tcggcctctg	gttcgacccc	accactgact	tccactccta	180

ctccgtcctc	tggaaccagc	gccaagtcgt	gtttcttgtg	gacgagacac	cgatccgcgt	240
gcacaccaac	ttggagcacc	ggggcatccc	gtaccogaag	gaccagccca	tgggcgtcta	300
c						301

<210> 765

<211> 516

<212> DNA

<213> Eucalyptus grandis

<400> 765

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gcgttggttg	tgggtctcgt	cgcggtgctg	aggtttgagg	agctctacca	gccgggctgg	180
gctatggacc	attttgtcta	cgaaggagag	gttctcaagc	tcaagcttga	caactactct	240
ggcgtcgggt	tcgggtcgaa	gagcaagtac	atgttcggca	aagttaccat	ccagatcaag	300
ctcgtcagag	gcgactcggc	tgggaccgtc	actgccttct	acatgtcgtc	ggatggaccg	360
aaccacaacg	aattcgactt	cgagttcctg	ggcaacacga	caggggagcc	ctacctggta	420
cagaccaacg	tgtacgtgaa	cggggtgggc	aaccgggagc	agagctcggc	ctctgggttcg	480
acccaccac	tgacttcact	cctactccgt	cctctg			516

<210> 766

<211> 349

<212> DNA

<213> Eucalyptus grandis

<400> 766

gtccctcgac	agagtgtcgg	ggtcgggctt	ccgggtccaag	aaggagtacc	tggtcggccg	60
gatcgacatg	cagctcaagc	tcgtcgccgg	gaactccgcc	ggcaccgtga	ccgcttacta	120
cttgtcttcg	caagggccaa	ctcacgatga	gattgacttc	gagttcctgg	ggaacctgag	180
cggcgaccct	tacatcctcc	acaccaacgt	cttactcaa	gggaaggcca	acaggagca	240
gcagttctac	ctgtggtttg	acccaccag	aaatttcac	acatactccg	tcctctggaa	300
gccccagcac	atcatcttct	tggtagacaa	cattcctatt	agagttttc		349

<210> 767

<211> 479

<212> DNA

<213> Eucalyptus grandis

<400> 767

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tgggaggcga	ctcgcccgga	gtggtcactg	cttactacat	gtgttcggag	aacggggcag	120
ggccggagag	ggatgagctg	gacttcgagt	tcttggggaa	ccggagcgga	cagccgtatc	180
tgatccagac	caacgtgtac	aagaacggga	cggtctcgcg	cgagatgcgg	cacatgctct	240
ggttcgacce	gaccgaggac	ttccactcct	attccatcct	ctggaacagc	caccagattg	300
tgttcttcgt	cgaccaggtg	ccggtcaggg	tggtcaagaa	caacggcgag	gcgaacaact	360
tcttcccaaa	cgagaagccc	atgtacctct	tctcgagcat	ctggaacgcc	gacgactggg	420
ccacgagggg	cggccttgag	aagaccgact	ggaccaaggc	gccgttcgtg	tccacctac	479

<210> 768

<211> 371

<212> DNA

<213> Eucalyptus grandis

<400> 768

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aactcacgat	gagattgact	tcgagttcct	ggggaaacctg	agcggcgacc	cttacatcct	120
ccacaccaac	gtcttcactc	aaggggaagg	caacagggag	cagcagttct	acctgtggtt	180

tgacccccacc	agaaatttcc	acacatactc	cgtcactctgg	aagccccagc	acatcatctt	240
cttggttaaca	acatcaccca	tctctctctc	tctctcccc	actctctctc	aagccaaaat	300
ataagccaaa	gtataagcca	aagtatagag	caatcatggc	ccatgaaggt	ggaggtccta	360
gtgcttcttc	c					371

<210> 769

<211> 368

<212> DNA

<213> Eucalyptus grandis

<400> 769

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aactcacgat	gagattgact	tcgagttcct	ggggaacctg	agcggcgacc	cttacatcct	120
ccacaccaac	gtcttcactc	aagggaaggg	caacagggag	cagcagttct	acctgtgggt	180
tgacccccacc	agaaatttcc	acacatactc	cgtcactctgg	aagccccagc	acatcatctt	240
cttggttagac	aacatcaccc	atctctctct	ctctctcccc	cactctctct	caagccaaaa	300
tataagccaa	agtataagcc	aaagtataga	gcaatcatgg	cccatgaagg	tggaggtcct	360
agtgtcttc						368

<210> 770

<211> 342

<212> DNA

<213> Eucalyptus grandis

<400> 770

ccagtcceaag	aacgagtacc	tgtttggtcaa	gattgacatg	caactcaagc	tcgttcccgg	60
caactccgca	ggcaccgtca	ccgcttacta	tttatcttca	aacgggtcga	cgtgggacga	120
gatagacttc	gagttcttgg	ggaacttgag	cggcgatcca	tacattctcc	acaccaacgt	180
cttcagccaa	ggcaagggta	accgagagca	gcaattctat	ctctgggttcg	acccaactgc	240
tgatttccac	acctactcca	tcctctggaa	tccacaacgc	atcatattct	catggacggg	300
actcccatca	gagagttcaa	gaacgcagag	tccatcggcg	tt		342

<210> 771

<211> 580

<212> DNA

<213> Eucalyptus grandis

<400> 771

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tcgcatcgcc	actctgtctc	tcgtggctgt	ttcttggggg	acgtttgctt	ccgcccgcga	180
cttctatcaa	gacttcgaca	taacctgggg	tgatggccga	gctcagatcc	tcaacaacgg	240
cgacctcctc	actctctccc	tcgacaaggc	ctccggctcc	ggcttccagt	ccaagaacga	300
gtacttggtc	ggcaagattg	acatgcagct	caagctagtt	cccggcaact	ccgctggcac	360
cgtcacccga	tactatttat	cttcaaacgg	gtcggcgtgg	gatgagatag	acttcgagtt	420
cttgggggaac	ttgagcggcg	atccatacat	tctccacacc	aacgtcttca	gccaaggcaa	480
gggtaaccga	gagcagcaat	tctatctctg	gttcgaccca	actgctgatt	tccacaccta	540
ctccatcctc	tggaaatccac	aacgcatcat	attctcagtg			580

<210> 772

<211> 407

<212> DNA

<213> Pinus radiata

<400> 772

agtagtggtc	ccttcacaac	aattatgtcg	ccagctgggg	ctcagatcac	atcaaacatt	60
ccatggcggt	cgaaagatga	gctgctcctc	aacaaacagt	atgggtgcggg	gtttgagtcg	120

aaggggacat	atatttttgg	gcattttcagt	atgcagataa	agctgggttg	cggtgattcc	180
gctggcactg	tcaccgcctt	ttatctttct	tctcagactg	cagagcacga	tgagatagac	240
tttgaattct	tggggaacaa	gtcgggggaa	ccctacattc	ttcagaccaa	tgtatttacg	300
ggcgggaagg	gtgagagaga	gcaccgaata	tacctctggt	tcgaccccac	caaggattac	360
cattcctatg	cggtgctctg	gaacatgtcc	caaattgcat	ttttggt		407

<210> 773

<211> 403

<212> DNA

<213> Pinus radiata

<400> 773

tgacaatgga	caagagttgc	agcttactct	tgaccgctct	tcaggttggtg	gtattcaatc	60
caagcaagag	tatctatttg	ccaagattga	tatccaaatc	aagttgggtac	ctggcaactc	120
tgcaggcaca	gtcactacct	tttatctatc	atctcaaggt	cccaaacacg	acgaaataga	180
cttcgaattt	ctgggcaacc	tgtccggaga	tccttatatt	ttgcacacta	atgtctttgc	240
tcaaggcctt	ggtgggcgtn	agcagcaatt	ttacttgtgg	ttcgacccaa	ccctggattt	300
ccacacttac	tccgtgctct	ggacatcaaa	ccaaattata	ttttctgtag	acggggagtct	360
attcgagtgt	ttaagaacag	ggagacagag	tngggtaaag	tgg		403

<210> 774

<211> 400

<212> DNA

<213> Pinus radiata

<400> 774

tgacaatgga	caagagttgc	agcttactct	tgaccgctct	tcaggttggtg	gtattcaatc	60
caagcaagag	tatctatttg	ccaagattga	tatccaaatc	aagttgggtac	ctggcaactc	120
tgcaggcaca	gtcactacct	tttatctatc	atctcaaggt	cccaaacacg	acgaaataga	180
cttcgaattt	ctgggcaacc	tgtccggaga	tccttatatt	ttgcacacta	atgtctttgc	240
tcaaggcctt	ggtgggcgtg	agcagcaatt	ttacttgtgg	ttcgacccaa	ccctggattt	300
ccacacttac	tccgtgctct	ggacatcaaa	ccaaattata	tttctgtaga	cgggagtcta	360
ttcgagtgtt	taagaacagg	gagacagagt	tgggtaaagt			400

<210> 775

<211> 384

<212> DNA

<213> Pinus radiata

<400> 775

gataactggt	gttgataata	atggcttgtt	taagaatgca	gagttgctgc	ttcttcattc	60
tgggtttttg	cttctgggta	tctaattgtg	cagagttcaa	tgatatcttc	gagcccagct	120
gggcgattga	tcattgttatg	aacgagggag	agctgttgaa	gctgaagctc	gacaactttt	180
ctggcgctgg	cttttcttcc	aaggcaacat	acttgtttgg	aaaagtaggg	gcgcagatta	240
aactcgttcc	cggcgactct	gcggggcacgt	gactgcattt	tatatgtctt	ctgagggggac	300
attgcatgac	gaattcgatt	tcgaattctt	gggaaatgct	tcgggtgagc	cttacattgt	360
gcagactaat	atctactcaa	tggg				384

<210> 776

<211> 345

<212> DNA

<213> Pinus radiata

<400> 776

tgagaaacag	cccatgaggg	ggtcctcttc	aatctggatg	cagataactg	ggctactcaa	60
ggtggggcgg	tgaagataaa	ctggggccat	tctcctttta	tctccactta	caaaggcttc	120
aacattggtg	caaacaaata	cggattaaat	ggagaaccaa	gaggggttat	taaaaatgga	180

agtaagtgggt	gggacaggcc	ctctcattct	tccttactc	cattacaaag	gcgaatgctc	240
cgatgggttac	atcggaacta	tatcatctat	gattactgca	aggattcgac	caggttttcc	300
acttcgccac	ctgagtgtgc	aggcctccgc	ttctagtctt	ttata		345

<210> 777

<211> 449

<212> DNA

<213> Pinus radiata

<400> 777

gttgggtagc	aacgtatgca	gataagctgt	tggtaaaatg	gcttctttga	gtatgcagag	60
ctgcttctta	attctggctc	tttgcttctg	ggcatcccat	tgtgcacagt	ttaatgatat	120
cttcgagccc	agctgggcga	cagatcatgt	tatgtatgag	ggagagctgt	tgaagcttaa	180
gctggacaat	atttccgggg	ctggctttgc	ttccaagaca	acatatttgt	ttggaaaagc	240
aggggcacag	attaagctcg	ttccagggtga	ctctgcaggc	acagttactg	ctttttatat	300
gtcttctgag	gggactctgc	acgacgaatt	cgatttcgaa	ttcttgggaa	atgcttcggg	360
tgagccttac	attgtgcaga	cgaatatcta	ctccaacggc	actggcaaaa	gggaacaacg	420
tattacctct	ggttcgaccc	cacggcaga				449

<210> 778

<211> 354

<212> DNA

<213> Pinus radiata

<400> 778

tattaatcca	taattatgga	catgggcatg	cccctcctct	ttcttttctt	attaataacc	60
tcgtcgagtc	ttcttgtaac	tgtttctgca	aatttctaca	acgatgtaga	tatcacatgg	120
ggcaatggtc	gtggtaaaat	ccttgacaat	ggccaacaat	tacagcttac	tctggatcgc	180
acttcagggt	gtgggtttca	atctaagaat	gagtatctgt	ttgctaaaat	tgatatgcaa	240
ataaagttgg	tacctggcaa	ctctgccggc	acagttactg	cctattatct	gtcgtctcaa	300
ggttccgaac	acgacgaaat	agactatgaa	tttctaggca	acctgtctgg	agat	354

<210> 779

<211> 392

<212> DNA

<213> Pinus radiata

<400> 779

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gtttattgtt	atattcgtgg	tttgcttaaa	ctctgtttct	gcacgcccgg	catcatttgc	120
agaggatttt	aaagtgcagt	gggcagatga	ccatgtcaaa	acaagggtcag	ataacaactc	180
catcgatctc	atcctggatc	agaattcagg	ggcaggattt	gcctccaaga	atcagtacat	240
gtttggactt	gtaagcatga	acatcaaact	tgtggcgggt	gattctgcag	ggacagtcac	300
tgctttttat	atgagctcgg	acaaggagga	agtgcgagat	gaattggatt	tcgagtttct	360
ggggacagat	caggacagcc	ttatacagtc	ca			392

<210> 780

<211> 293

<212> DNA

<213> Pinus radiata

<400> 780

cgtttattca	aaaggggttg	gcaacagaga	acagcgcttt	ttcttatggg	tcgacccaac	60
tcgagacttt	cattcctatt	cctttctgtg	gaatcgccac	caagttgttt	tctttgtgga	120
tgatgtgccc	gtacggatat	tttccaacaa	tgagaaaaga	ggagtcccat	atcctcaaac	180
tcaacccatg	ggcgataact	cgtcaatatg	gaacgcagac	gattgggcta	ctcaaggggg	240
cctcgtcaag	accgattgga	gccacgcacc	tttcatttcc	acatacaaga	att	293

<210> 781
 <211> 451
 <212> DNA
 <213> Pinus radiata

<400> 781
 ctccaatggc actggcaaca gggaacaacg catttacctc tggttcgacc ccaccgcaga 60
 ttccattcc tattcttttc tgtggaacca caagcaagtt gtattctttg tagacagtgt 120
 tccgattagg gtattcccca acaacgagag gctgggagtc ccatactcta agaaacagcc 180
 catgagggtg tcctcttcaa tctggaatgc agataactgg gctactcaag gtgggcggtc 240
 gaagataaac tggagccatt ctctttttat ctccacttac agaaggttcg acatcgatgc 300
 aaaccaatac ggattaaatg gagaatcaag agggttttatt gagaatggaa gtaagtgggtg 360
 ggacaggccc tctcattctt cccttactcc attacaaagg cgaatgctcc cgatgggtgc 420
 atcggaacta tatcatctat gcctacctga a 451

<210> 782
 <211> 387
 <212> DNA
 <213> Pinus radiata

<400> 782
 cactggctta gatacacagt ccagtcgaat cgggtcttga ggatggcatt cgtagggttgt 60
 caagaagggg gtcgtgtcat gcaactgcgt ctctctttgta tctttgtaac gttgtgcaac 120
 tgctcgtga gctctcaatg tgcgtccttc gacgatttct tctacccag ttgggctgtt 180
 gatcatgtca tgtcccaagg agagttgctc cagctcaagc ttgataacat ttctgggtgca 240
 ggatttgctt cgaagagcac atacatcttc ggaaaagcaa atgtgcagat taagctcggt 300
 cccggggact ctgctggcac tgttactgca ttctatatgt cttccaagg cgatcagcat 360
 gacgaattcg actttgaatt tttgggg 387

<210> 783
 <211> 401
 <212> DNA
 <213> Pinus radiata

<400> 783
 cgtttattca aaagggggtg gcaacagaga acagcgcttt ttcttatggt tcgacccaac 60
 tgcagacttt cattcctatt cctttctgtg gaatcgccac caagttgttt tctttgtgga 120
 tgatgtgccc gtacggatat tttccaacaa tgagaaaaga ggagtcccat atcctcaaac 180
 tcaacccatg ggcgtatact cgtcaatatg gaacgcagac gattgggcta ctcaaggggg 240
 cctcgtcaag accgattgga gccacgcacc tttcatttcc acatacaaga atttcagcat 300
 tgatgcctgt caatattcct cgaaaacgag ctgcgcttcg tgggtgggatg agcctgctta 360
 cgcttctctt gatggaaagc agaggctgaa actgaatggg t 401

<210> 784
 <211> 370
 <212> DNA
 <213> Pinus radiata

<400> 784
 cttcagacca atgtattttac gggcggaag ggtgagagag agcaccgaat atacctctgg 60
 ttcgacccca ccaaggatta ccattcctat gctgtgctct ggaacatgta ccaaattgca 120
 tttttggtan atgaggtacc aatccgggtg ttcaagaaca gcaaggatct gggcgtgagg 180
 taccatttta accagccgat gaagatctat tcgagcctgt ggaatgctga tgactgggcc 240
 acccgagggg gtctggagaa aaccgactgg gccaaaggcg ccttcacgc ctctacagg 300
 gaattccacg tcgatgcctg tgaggcttct gctccgaaat cgggtgtgcgc aacgaagggg 360
 gcggcggtgg 370

<210> 785
 <211> 241
 <212> DNA
 <213> Pinus radiata

<400> 785
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 gcagattttcc attcctattc ttttctatgg aaccacaacc aagttgtttt ctttgtggat 120
 agtggtccga ttcgggtatt cccaacaac gagcggtgg gagtcccata tccgaaaagc 180
 cagccgctga gagtatcctc ctcaatctgg aatgcagccg actgggctac acaaggcggg 240
 c 241

<210> 786
 <211> 180
 <212> DNA
 <213> Pinus radiata

<400> 786
 catctactcc aacggcactg gcaaaagggg acaacgtatt tacctctgggt tcgacccccac 60
 ggcagatttc cattcctatt cttttctatg gaaccacaac caagttgttt tctttgtgga 120
 tagtggtccg attcgggtat tccccaaaca cgagcggtg ggagtcccat atcccgaaaa 180

<210> 787
 <211> 264
 <212> DNA
 <213> Pinus radiata

<400> 787
 ctggactttg agttttctggg gaacagaagt ggagagccct atgctctgca gacgaacatc 60
 tatgcaaagg gtgtgggtgg cagggaacag aggcacatcc tctgggtcga tccaacaaca 120
 cagtttcaca cttactccat cctctggaac tctcatcaga ttgtgttctt cgtagaccaa 180
 gttcctgtga gaggccacag gcacactgag gctacgagcg atgcgttccc taaagaacag 240
 gggatgtaca tgttttccag catt 264

<210> 788
 <211> 298
 <212> DNA
 <213> Pinus radiata

<400> 788
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 taactgggcg acgaggggcg ggctggaaaa gattgactgg agcaaggcgc cattcggttgc 120
 ctctacagg ggatttgaga tcgaatcctg ccagtaccgc ggtaaagcga gctgcgtggg 180
 taacaccagc aattgggtggg aagggttgag ctacagcggc ctcaaacc aa atcaagcgag 240
 gttatacaaaa tgggtgagga cgaattacat gatttatgat tattgtaagg acacgccc 298

<210> 789
 <211> 375
 <212> DNA
 <213> Pinus radiata

<400> 789
 tcgtaccagg agactctgca ggagttgtca ctgcttatta tatgtcttct gacacagaca 60
 tgaataggga cgagctagat ttggaatttc tagggaacag aagtggacag ccttatggtc 120
 ttcagacgaa catctattca aatgggtgtg gtggaaggga acagaggcat atcctctggg 180
 tcgatccaac gacagagttt cacacttact ctatcctctg gaacgctcat cagattgtgt 240

ttttcgtgga ccaagttcca ttgagagtcc acaggcacac taaggctaca cgccatgtgt	300
tccctcgaaa gcaggggatg tacatgttct ccagcatttg gaatggagac aactgggcaa	360
cgagaaggcg gcctt	375

<210> 790

<211> 442

<212> DNA

<213> Pinus radiata

<400> 790

tcgtaccagg agactctgca ggagttgtca ctgcttatta tatgtcttct gacacagaca	60
tgaataggga cgagctagat tttgaatttc tagggaacag aagtggacag ccttatgggc	120
ttcagacgaa catctattca aatgggtgtg gtggaaggga acagaggcat atcctctggt	180
tcgatccaac gacagagttt cacacttact ctatcctctg gaacgctcat cagattgtgt	240
ttttcgtgga ccaagtncca ttgagagtcc acaggcacac taaggctaca cgccatgtgt	300
tccctcgaaa gcaggggatg tacatgttct ccagcatttg gaatggagac aactgggcaa	360
cgagaggcgg cnttgagaag acccaacctg ggcggtgtct ccgttcgtat cttcgtacaa	420
gaaattccat gggctcgggtg ca	442

<210> 791

<211> 424

<212> DNA

<213> Pinus radiata

<400> 791

cctattcggg tgttttccaa caatgagaaa agaggagtcc catttcctca aaccgcacct	60
tatgggcgta tactcttcaa tatggaacgc agatgactgg gctactcaag gtggccgcgt	120
aaagaccgat tggagccacg ctccctttat ttccacatac acaagtttca acatcgatgc	180
ttgcaaatat agccctggca gttcatgtac ttctgtggtg gatcagccgg cgtacgcctc	240
acttaccgca aagcagcgca tgcaactcaa gtgggtacac gagaaataca tgatttacga	300
ttactgcaaa gatccagtta gatttggtac acctccagca gagtgtactg catgatgtgg	360
gtcttttaaac ttgacttctt acccattcca tgatcttaat tcacaaatat ttgtccactt	420
gaat	424

<210> 792

<211> 219

<212> DNA

<213> Pinus radiata

<400> 792

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cttgggaaat gcttcgggtg agccttacat tgtgcagact aatatctact ccaacggcac	120
tggcgacagg gaacaacgca ttacctctg gttcgacccc accgcagatt tccattccta	180
ttcttttctg tggaaccaca agcaagttgt attctttgt	219

<210> 793

<211> 405

<212> DNA

<213> Pinus radiata

<400> 793

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ccatttggct cgacaggaac tcgggaagcg gattttaaact gctgagaccg tacaagtctg	120
gctacttcag tgcagccatt aagttgcagg ctgggtatac tgcaggagtc aatactgcct	180
tttatttatc gaacaacgag gctcaccgag actaccacga tgaaatagac attgaatttc	240
tgggaaatat cccgggaaga ccttatacct tacagaccaa catttatgta agagctggaa	300
atgcgggacg agggaggatt attacaggaa gggngcagca aatccacctt tggtttgatc	360

ccactaagga ttttcaccgt tacagcattc tctggactcc atttg 405

<210> 794

<211> 348

<212> DNA

<213> Pinus radiata

<400> 794

ggaatgggga	gagctgggca	accaacggag	gaaagacaaa	gatcacctgg	gagccttacc	60
catttggtgc	tcagttcaga	aactttttaca	tcgatggctg	tgagtgggaat	ggaaacoccta	120
ggttctgcaa	gggaggcagc	acacaaaatt	ggtggaataa	gagaacatat	gcttacttta	180
acgctgggga	tagactcaaa	ctccattggg	taaggaagca	ttatctcgtc	tatgactact	240
gtaatgacaa	ggtcagattc	aaagtagccc	ctgaggaatg	caggtaccac	atttaatcca	300
tagcctgccg	agcatttttt	agtatttggt	aataagacag	tctggtgg		348

<210> 795

<211> 377

<212> DNA

<213> Pinus radiata

<400> 795

ctttctctgg	gaatcgccac	caatctgttt	tctttgtgga	cgatgtacct	attcgggtgt	60
tttccaacaa	tgagaaaaga	ggagtcccat	ttcctcaaac	ccgccctatg	ggcgtatact	120
cttcaatatg	gaacgcagat	gactgggcta	ctcaagggtg	ccgcgtaaag	accgattgga	180
gccacgctcc	ttttatttcc	acatacacaa	gtttcaacat	cgatgcttgc	aaatacagcc	240
ctggtagttc	atgtacttcg	tggtgggatc	agccggcgta	cgctcactt	accgcaaagc	300
agatcatgca	actcaagtgg	gtacacgaga	aatacatgat	ttacgattac	tgcaaagatt	360
cagttagatt	tggtaca					377

<210> 796

<211> 379

<212> DNA

<213> Pinus radiata

<400> 796

gacatggcct	gtttaagatt	gcagagctgc	tgctttttcg	ttctgggttt	ttgcttctgg	60
gtatctaatt	gtgcagagtt	caatgatata	ttcgagccca	gctgggcgat	tgatcatgtt	120
atgaacgagg	gagagctgtt	gaagctgaag	ctcgacaatt	tttctggcgc	tggtttttct	180
tccaaggcca	catacttggt	tggaaaagta	ggggcgcgaga	ttaaactcgt	tcccggcgac	240
tctgcgggca	cagtgaactgc	attttatatg	tcttctgagg	ggacattgca	tgacgaattc	300
gatttcgaat	tcttgggaaa	tgcttcgggt	gaagccttac	attgtgcaga	ctaatatcta	360
ctccaaacgg	gaactggcg					379

<210> 797

<211> 315

<212> DNA

<213> Pinus radiata

<400> 797

tagacattga	atttctggga	aatatcccgg	gaagacctta	taccttacag	accaacattt	60
atgtaagagc	tggaaatgcg	ggacgaggga	ggattattac	aggaaggagg	cagcaaatcc	120
acctttgggt	tgatcccaact	aaggattttc	accgttacag	cattctctgg	actccattga	180
agattatatt	ttttgtggat	gacatcccaa	taagaaagta	tcgaaggacg	aacccttaca	240
ctttcccggc	aaggcccatg	tgggctgtac	ggatcgattc	tgggatgcac	ctccttgggc	300
tacagataac	gggaa					315

<210> 798

<211> 412
 <212> DNA
 <213> Pinus radiata

<400> 798
 ggaaactttg atgatgattt ttacattatg tggtcacctg atcatgtcac caggctctac 60
 aatggacatg gcgtgcagat tagtatggac aggcagtcag gttcgggctt cgcaacgaag 120
 aaacaatatt tgtttgga gttcgaaatg caaatcaagc ttccaccagg aaattctgcg 180
 ggcactgttg tggctgttta tttgtattcc aatcagccaa acagagacga gatcgacatt 240
 gaatttttgg gcaatgttga tggcaaggac atcatcatgc agactaatgt ttttgctaatt 300
 ggctacgatg atcgagagca gcggatcaaaa ctctgggttg atcccacagc agattttcac 360
 acatacacia tcttttgga ccggtaccac attgtatttc tggtagatgg ct 412

<210> 799
 <211> 303
 <212> DNA
 <213> Pinus radiata

<400> 799
 ggcagagcta gatttttgaat ttctagggaa cagaagtgga cagccttatg gtcttcagac 60
 gaacatctat tcaaagtgtg tgggtggaag ggaacagagg catatcctct gggtcgatcc 120
 aacgacagag tttcacactt actctatcct ctggaacgct catcagattg tgtttttcgt 180
 ggaccaagtt ccattgagag tccacaggca cactaaggct acacgccatg tgttccctcg 240
 aaagcagggg atgtacatgt tctccagcat ttggaatgga gacaactggg caacgagagg 300
 cgg 303

<210> 800
 <211> 298
 <212> DNA
 <213> Pinus radiata

<400> 800
 cgtggaccaa gttccattgt gtgtccacag gcacactaag gctacacgcc atgtgttccc 60
 tcgaaagcag gggatgtaca tgttctccag catttggaat ggagacaact gggcaacgag 120
 aggcggcctt gagaagacca actgggcggc tgctccgttc gtatcttcgt acaagaaatt 180
 ccatggcctc ggctgcaaat gggaggatca aaacacgacc caatcgctcct gtgtctcacag 240
 taataatgca agtgcaaggc actggtggga taagcccagag gcgcggactc tgacgaag 298

<210> 801
 <211> 268
 <212> DNA
 <213> Pinus radiata

<400> 801
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 ctgacacaga catgaatagg gacgagctag attttgaatt tctagggaa agaatgtggac 120
 agccttatgg tcttcagacg aacatctatt caaatggtgt ggggtggaagg gaacagaggc 180
 atatcctctg gttcgatcca acgacagagt ttcacactta ctctatcctc tggaaacgcnc 240
 atcagattgt gtttttcgtg gaccaagt 268

<210> 802
 <211> 395
 <212> DNA
 <213> Pinus radiata

<400> 802
 cagagtttca cacttactct atcctctgga acgctcatca gattgtgttt ttcgtggacc 60

aagttccatt	gagagtccac	aggcacacta	aggctacacg	ccatgtgttc	cctcgaaagc	120
aggggatgta	catgttctcc	agcattttga	atggagacaa	ctgggcaacg	agaggcggcc	180
ttgagaagac	caactgggcg	gctgctccgt	tcgtatcttc	gtacaagaaa	ttccatggcc	240
tcggctgcaa	atgggaggat	caaaacacga	cccaatcgtc	ctgtgctcac	agtaataatg	300
caagtgcaag	gcactgggtg	gataagcccc	aggcgcggac	tctgacgaag	aaacagaggg	360
aatattacag	gtgggtgaac	agcaaataatt	tgact			395

<210> 803

<211> 429

<212> DNA

<213> Pinus radiata

<400> 803

gttgggtagc	agcgtagtgc	agataagctg	ttgttaaaat	ggcttctttg	agtatgcaga	60
actgcttctt	aattctggct	ctttgcttct	gggcatccca	ttgtgcacag	tttaatgata	120
tcttcgagcc	cagctgggcg	acagatcatg	ttatgtatga	gggagagctg	ttgaagctta	180
agctggacaa	tatttccggg	gctggctttg	cttacaagac	aacatatttg	tttggaaaag	240
caggggcaca	gattaagctc	gttccagggtg	actctgcagg	cacagttact	gctttttata	300
tgtcttctga	ggggactctg	cacgacgaat	tcgatttcga	attcttgggg	aatgcttcgg	360
gtgagcctta	cattgtgcag	accgaatatc	taactccaac	ggcactgggc	aaaagggaca	420
acgtatttta						429

<210> 804

<211> 432

<212> DNA

<213> Pinus radiata

<400> 804

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actgcttctt	aattctggct	ctttgcttct	gggcatccca	ttgtgcacag	tttaatgata	120
tcttcgagcc	cagctgggcg	acagatcatg	ttatgtatga	gggagagctg	ttgaagctta	180
agctggacaa	tatttccggg	gctggctttg	cttccaagac	aacatatttg	tttggaaaag	240
caggggcaca	gattaagctc	gttccagggtg	actctgcagg	cacagttact	gctttttata	300
tgtcttctga	ggggactctg	cacgacgaat	tcgatttcga	attcttggga	aatgcttcgg	360
gtgagcctta	cattgtgcag	acgaatatct	actccaacgg	cactggcaaa	aggggacaac	420
gtattttacct	ct					432

<210> 805

<211> 438

<212> DNA

<213> Pinus radiata

<400> 805

cgggggctct	gttcgagtgt	ttnaagaaca	gggagacaga	gttgggtaaa	gtgganagca	60
attatcatta	tcccaaaacc	caagcaatga	gggtctactc	cagccttttg	aatgcagatg	120
attgggcaac	caggggtggg	cttgtgaaga	ccgactggac	taaagctccc	tttgttgcac	180
ccctccgcaa	tttcaatgct	gccgctactt	cttcttttga	tgccgcccga	gaggagggtg	240
cttttgaatc	gaaccaagaa	cagaggcaga	ggctccagtg	ggtacgaaag	aactacatga	300
tctacgatta	ttgtgcagac	accaagagat	tccccaggg	accgcctccc	gaatgcaaat	360
aaaacctcaa	tccttttgaat	tcagagaatg	aactctgaat	tctaccttcc	aaggaattct	420
gattcatttc	tattttaca					438

<210> 806

<211> 393

<212> DNA

<213> Pinus radiata

<400> 806

accatattgt	gttttctgta	agatgatatc	cccattaggg	tttacaagaa	caacgaagcg	60
agagggtgtt	catttccgaa	gaatcaaagc	atggggatct	tcccaanncn	ctgggaagcc	120
gataactggg	cgacgagggg	cgggctggaa	aagattgact	ggagcaaggc	gccattcggt	180
gcctcctaca	ggggatttga	gatcgaatcc	tgccagtacc	cgggtaaagc	gagctgcgtg	240
gttaacacca	gcaattggtg	ggaagggttg	agctacagcg	gcctcaaacc	agatcaagcg	300
aggttatata	aatgggtgag	gacgaattac	atgatttatg	attattgtaa	ggacacgccc	360
aggtatccag	tgctgcccac	ttgagtgcaa	cgc			393

<210> 807

<211> 259

<212> DNA

<213> Pinus radiata

<400> 807

cacagtttga	atggatatct	ttcgagccca	gctgggcgac	agatcatggt	atgtatgagg	60
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catatttgtt	tggaagagca	ggggcacaga	ttaagctcgt	tccaggtgac	tctgcaggca	180
cagttactgc	tttttatatg	tcttctgagg	ggactctgca	cgacgaattc	gatttcgaat	240
tcttgggaaa	tgcttcggg					259

<210> 808

<211> 440

<212> DNA

<213> Pinus radiata

<400> 808

gcagtttctt	tgtggatgat	gtgcccgcac	ggatattttc	caacaatgag	aaaagaggag	60
tcccatatcc	tgaaactcaa	cccatgggcg	tatactcgtc	aatatggaac	gcagacgatt	120
gggctactca	agggggcctc	gtcaagaccg	attggagcca	cgcacctttc	atttccacat	180
acaagaattt	cagcattgat	gcctgtcaat	attcctcgaa	aacgagctgc	gtttcgtggt	240
gggatgagcc	tgcttacgct	tctcttgatg	gaaagcagag	gctgaaactg	aaatgggtac	300
acgagaaata	catgacttac	gattactgca	aagattctgt	cagatttccc	acgcgtccag	360
cagagtgtga	atgaaatgcc	cttcttaaac	ttgagctctc	atcaagatcc	cccttcattt	420
ctttgtattg	catgcattcc					440

<210> 809

<211> 263

<212> DNA

<213> Pinus radiata

<400> 809

gaagccatga	agaggacaca	ttttcttggt	ctgtttcnca	ttctgttact	ccattctgct	60
gccatggcta	ccactcccag	gaagccagtg	agtgtgccct	ttcacaacaa	ttatgtcgcc	120
agctggggct	cagatcacat	caaacaattc	catggcggtc	gaaagactga	gctgtcctc	180
aacaaacagt	atggtgcggg	gtttgantcg	aaggggacat	atttatttgg	gcatttcagt	240
atgcagataa	agctggttgc	cgg				263

<210> 810

<211> 423

<212> DNA

<213> Pinus radiata

<400> 810

aaatgacaaa	taaactgttg	ttaaaatggc	ttctttgagt	atgcagagct	gcttcttaat	60
tctggctctt	ttgttcttgg	gcatccatt	gtgcacagtt	taatgatata	ttcgagccca	120
gctgggcgac	agatcatggt	atgtatgagg	gagagctgtt	gaagcttaag	ctggacaata	180

tttccggggc	tggttttgct	tccaagacaa	catatttggt	tggaaaagca	ggggcacaga	240
ttaagctcgt	tccaggtgac	tctgcaggca	cagttactgc	tttttatatg	tcttctgagg	300
ggactctgca	cgaagcattc	gatttcgaat	tcttgggaaa	tgcttcgggt	gagccttaca	360
ttgtgcagac	gaatatctac	tccaacggca	ctggcaaaaag	ggacaacgta	ttaacctctg	420
ggt						483

<210> 811

<211> 483

<212> DNA

<213> Pinus radiata

<400> 811

gtcaaaagca	tttctctttt	ggatagctag	caggaggctg	gtgcttttct	aggcaatgct	60
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tacccacact	ccgaagcctg	tggatgtgcc	attccaaaaa	aactatgtac	ccacctgggc	180
ttctgatcat	atcaagtaca	ttaatggggg	gaacgaagcg	cactttctct	tgacaaatgg	240
acaggtactg	gcttccaatc	caagggtagc	tacttgtttg	gacatttcag	tatgcagata	300
aagatggttc	ctgggtgactc	tgcaggcggt	gtgactgcct	tttatttatc	ctctcagaac	360
tctgaacatg	atgaaataga	ctttgagttc	ttgggcaata	gggtctggaca	accttacatt	420
ctccaaacta	atgtttttcag	tggaggaagg	ggggcaagag	agcaacgcga	atatccctgg	480
ttt						483

<210> 812

<211> 323

<212> DNA

<213> Pinus radiata

<400> 812

tgacaatgga	caagagttgc	agcttactct	tgaccgctct	tcaggttgtg	gtattcaatc	60
caagcaagag	tatctatttg	ccaaagattg	atatccaaat	caagttggta	cctggcaact	120
ctgcaggcac	agtcactacc	ttttatctat	catctcaagg	tcccaaacac	gacgaaatag	180
acttcgaatt	tctgggcaac	ctgtccggag	atccttatat	tttgacact	aatgtctttg	240
ctcaaggcct	tggtgggcgt	gagcagcaat	tttacttgtg	gttcgacca	accctggatt	300
tccacactta	ctccgtgctc	tgg				323

<210> 813

<211> 430

<212> DNA

<213> Pinus radiata

<400> 813

tgacaatgga	caagagttgc	agcttactct	tgaccgctct	tcaggttgtg	gtattcaatc	60
caagcaagag	tatctatttg	ccaagattga	tatccaaatc	aagttggtac	ctggcaactc	120
tgcaggcaca	gtcactacct	tttatctatc	atctcaagg	cccaaacacg	acgaaataga	180
cttcgaattt	ctgggcaacc	tgtccggaga	tccttatatt	ttgcacacta	atgtctttgc	240
tcaaggcctt	ggtgggcgtg	agcagcaatt	ttacttgtgg	ttcgacccaa	ccctggattt	300
ccacacttac	tccgtgctct	ggacatcaaa	ccaaattata	ttttctgtag	acgggagtc	360
tattcgagtg	ttaagaacag	ggagacagag	ttgggaaagt	ggaaacaatt	atcattatcc	420
caagagcaag						430

<210> 814

<211> 331

<212> DNA

<213> Pinus radiata

<400> 814

gtttcgggcg	ccagtgaagg	tcgttggaag	ccatgaagag	gacacagttt	cttgttctgt	60
------------	------------	------------	------------	------------	------------	----

ttctcattct	gttactccat	tctgctgcca	tggctaccac	tcccaggaag	ccagtgagtg	120
tgccctttca	caacaattat	gtcgccagct	ggggctcaga	tcacatcaaa	caattccatg	180
gcggtcgaaa	gactgagctg	ctcctcaaca	aacagtatgg	tgcggggttt	gagtcgaagg	240
ggacataattt	atttgggcat	ttcagtatgc	agataaagct	ggttgccggt	gattccgctg	300
gcactgtcac	cgccttttat	ctttcttctc	a			331

<210> 815

<211> 257

<212> DNA

<213> Pinus radiata

<400> 815

gcatttacct	ctgggttcgac	cccaccgtag	atttccattc	ctattctttt	ctgtggaacc	60
acaagcaagt	tgtattcttt	gtagacagtg	ttccgattag	ggtattcccc	aacaacgaga	120
ggctgggagt	cccatatcct	aagaaacagc	ccatganggn	atcctcttca	atctggaatg	180
cagataactg	ggctactcaa	ggtgggcggc	tnangataaa	ctggagccat	tctcctttna	240
tctccactta	caaaagg					257

<210> 816

<211> 216

<212> DNA

<213> Pinus radiata

<400> 816

accccaccaa	ggattaccat	tcctatgctg	tgctctggaa	catgtaccaa	attgcatttt	60
tggtagatga	ggtaccaatc	cggtgtttca	agaacagcaa	ggatctgggc	gtgaggtacc	120
catttaacca	gccgatgaag	atctattcga	gcctgtggaa	tgctgatgac	tgggccaccc	180
gaggggggtct	ggagaaaacc	gactgggcca	aggcgc			216

<210> 817

<211> 393

<212> DNA

<213> Pinus radiata

<400> 817

gccagctggg	gctcagatca	catcaaacia	ttccatggcg	gtcgaaagac	tgagctgctc	60
ctcaagaaac	agtatgggtc	ggggtttgag	tcgaagggga	catatttatt	tgggcatttc	120
agtatgcaga	taaagctggg	tgccggtgat	tccgctggca	ctgtcaccgc	cttttatctt	180
tcttctcaga	ctgcagagca	cgatgagata	gactttgaat	tcttggggaa	caagtcgggg	240
gaaccctaca	ttcttcagac	caatgtattt	acgggcggga	aggggtgagag	agagcaccga	300
atatacctct	ggttcgaccc	caccaaggat	taccattcct	atgctgtgct	ctggaacatg	360
taccaaattg	catttttttg	tagatgaggt	acc			393

<210> 818

<211> 457

<212> DNA

<213> Pinus radiata

<400> 818

gccagctggg	gctcagatca	catcaaacia	ttccatggcg	gtcgaaagac	tgagctgctc	60
ctcaacaaac	agtatgggtc	ggggtttgag	tcgaagggga	catatttatt	tgggcatttc	120
agtatgcaga	taaagctggg	tgccggtgat	tccgctggca	ctgtcaccgc	cttttatctt	180
tcttctcaga	ctgcagagca	cgatgagata	gactttgaat	tcttggggaa	caagtcgggg	240
gaaccctaca	ttcttcagac	caatgtattt	acgggcggga	aggggtgagag	agagcaccga	300
atatacctct	ggttcgaccc	caccaaggat	taccattcct	atgctgtgct	ctggaacatg	360
taccaaattg	catttttttg	agatgaggtg	ccaatccggg	tggtcaagaa	cagcaaggat	420
ctgggcgtga	ggacccattt	aaccagccga	tgaagat			457

<210> 819
 <211> 283
 <212> DNA
 <213> Pinus radiata

<400> 819
 cgantataacc tctgggttcga cccacccaag gattaccatt cctatgctgt gctctggaac 60
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 ggatctgggc gtgaggtacc catttaacca gccgatgaag atctattcga gcctgtggaa 180
 tgctgatgac tgggccaccc gagggggtct ggagaaaacc gactgggcca aggcgcctt 240
 catcgctcc tacagggaat tccacgtcga tgctgtgag gct 283

<210> 820
 <211> 342
 <212> DNA
 <213> Pinus radiata

<400> 820
 cattcctatt cttttttgtg gaaccacaag caagttgtat tctttgtaga cagtgttccg 60
 attagggat tccccaacaa cgagaggctg ggagtcctat atcctaagaa acagcccatg 120
 agggatctct cttcaatctg gaatgcagat aactgggcta ctcaagggtg gcggctgaag 180
 ataaactgga gccattctcc ttttatctcc acttacaaaa ggttcgacat cgatgcaaac 240
 caatacggat taaatggaga atcgagagg gttattgaga atggaagtaa gtgggtggac 300
 agggcctctc attcttccct tactccatta caaaggcgat gc 342

<210> 821
 <211> 316
 <212> DNA
 <213> Pinus radiata

<400> 821
 cgaatataacc tctgggttcga cccacccaag gattaccatt cctatgctgt gctctggaac 60
 atgtaccaaaa ttgcattttt ggtagatgag gtaccaatcc ggggtgttcaa gaacagcaag 120
 gatctgggcg tgaggtaccc atttaaccag ccgatgaaga tctattcgag cctgtggaat 180
 gctgatgact gggccacccg aggggggtctg gagaaaaccg actgggcaa ggcgccttc 240
 atcgctctct acagggaatt ccacgtcgat gcctgtgagg cttctgctcc ggaatcggtg 300
 tgcgctacgc agggggg 316

<210> 822
 <211> 460
 <212> DNA
 <213> Pinus radiata

<400> 822
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 caagcaagag tatctatttg ccaagattga tatccaaatc aagttggtac ctggcaactc 120
 tgcaggcaca gtcactacct tttatctatc atctcaagg cccaaacacg acgaaataga 180
 cttcgaattt ctgggcaacc tgtccggaga tccttatatt ttgcacacta atgtctttgc 240
 tcaaggcctt ggtgggctg agcagcaatt ttacttgtgg ttcgacccaa ccctggattt 300
 ccacacttac tccgtgctct ggacatcaaa ccaaattata ttttctgtag acgggagtcc 360
 tattcgagtg ttttaagaaca gggagacaga gttgggtaaa gtggataaca attatcatta 420
 tcccaagagc caagcaatga gcgtctactc cagcctttgg 460

<210> 823
 <211> 329
 <212> DNA

<213> Pinus radiata

<400> 823

cgtctcaagg	ccccaaacat	gacgaaatag	actttgaatt	tcttggcaac	ctctctgggg	60
atccttatat	tatgcacact	aatgtcttcg	ctcaaggcct	tggcaatcgt	gagcaacaat	120
tttacttgtg	gttcgaccca	accttggatt	tccacactta	ctccgtgctc	tggacatcaa	180
accaaactcat	attctctgta	gacgagactc	ccgttcgagt	gtttaagaac	agggagacag	240
agttgggtaa	agtggatagc	aattatcaet	atcctaagag	ccaagcaatg	aaggctctatt	300
caagcctctg	gaatgcagat	gattggggcg				329

<210> 824

<211> 328

<212> DNA

<213> Pinus radiata

<400> 824

ctttctctgg	aatcgccacc	aatctgtttt	ctttgtggac	gatgtacct	ttcgggtggt	60
ttccaacaat	gagaaaagag	gagtcccat	tcctcaaacc	cgccctatgg	gcgtatactc	120
ttcaatatgg	aacgcagatg	actgggctac	tcaagggtggc	cgcgtaaaga	ccgattggag	180
ccacgctcct	tttattttcca	catacacaag	tttcaacatc	gatgcttgca	aatacagccc	240
tggtagttca	tgtacttcgt	ggtgggatca	gccggcgctac	gcctcactta	ccgcaaagca	300
gatcatgcaa	ctcaagtggg	tacacgag				328

<210> 825

<211> 352

<212> DNA

<213> Pinus radiata

<400> 825

gcattttacct	ctgggttcgac	cccaccgcag	atttccattc	ctattctttt	ctgtggaacc	60
acaagcaagt	tgtattcttt	gtagacagtg	ttccgattag	ggtattcccc	aacaacgaga	120
ggctgggagt	cccatatcct	aagaaacagc	ccatgagggt	atcctcttca	atctggaatg	180
cagataactg	ggctactcaa	ggtgggcggc	tgaagataaa	ctggagccat	tctcctttta	240
tctccactta	caaaagggtc	gacatcgatg	caaaccaata	cggattaaat	ggagaatcaa	300
gaggggtttat	tgagaatgga	agtaagtggg	gggacaggcc	ctctcattct	tc	352

<210> 826

<211> 215

<212> DNA

<213> Pinus radiata

<400> 826

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ctcaacaaac	agtatgggtg	ggggtttgag	tcaaggggga	catatttatt	tgggcatttc	120
agtatgcaga	taaagctggg	tgccggtgat	tccgctggca	ctgtcaccgc	cttttattct	180
tcttctcaga	ctgcagagca	cgatgagatg	acttt			215

<210> 827

<211> 463

<212> DNA

<213> Pinus radiata

<400> 827

gttgacatgg	cttgttttaag	attgcagagc	tgctgctttt	tcgttctggg	ttttttgctt	60
ctgggtatct	aattgtgcag	agttcaatga	tatcttcgag	cccagctggg	cgattgatca	120
tgttatgaac	gagggagagc	tgttgaagct	gaagcttggc	cattttttct	ggcgctggct	180
tttcttccaa	ggccacatac	ttgtttggaa	aagtaggggc	gcagattaaa	ctcgttcccc	240

gcgactctgc	gggcacagt	actgcatttt	atatgtcttc	tgaggggaca	ttgcatgacg	300
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tctactccaa	cggcactggc	gacaggggaa	aacgcattta	cctctggttc	gaccccaccg	420
cagatttcca	ttcctattct	tttctgtgga	accacaagca	agt		463

<210> 828

<211> 342

<212> DNA

<213> Pinus radiata

<400> 828

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gcagattaaa	ctcgttcccg	gcgactctgc	gggcacagt	actgcatttt	atatgtcttc	120
tgaggggaca	ttgcatgacg	aattcgattt	cgaattcttg	ggaaatgctt	cgggtgagcc	180
ttacattgtg	cagactaata	tctactccaa	tggcactggc	aacaggggaa	aacgcattta	240
cctctggttc	gaccccaccg	cagatttcca	ttcctattct	tttctgtgga	accacaagca	300
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<210> 829

<211> 447

<212> DNA

<213> Pinus radiata

<400> 829

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gtttattggt	atattcgtgg	tttgcttaaa	ctctgtttct	gcacgcccgg	catcatttgc	120
agaggatttt	aaagtgcgt	gggcagatga	ccatgtcaaa	acaaggtcag	ataacaactc	180
catcgatctc	atcctggatc	agaattcagg	ggcaggattt	gcctccaaga	atcagtacat	240
gtttggactt	gtaagcatga	acatcaaact	tgtggcgggt	gattctgcag	ggacagtcac	300
tgctttttat	atgagctcgg	acaaggagga	agtgcgagat	gaattggatt	tcgagtttct	360
ggggaacaga	tcaggccagc	cttatacagt	ccaaacaaat	gtgtttgctc	tcgggaaggg	420
tggccgcgag	cagagagtga	atctctg				447

<210> 830

<211> 471

<212> DNA

<213> Pinus radiata

<400> 830

tgtttaagaa	tgcagagttg	ctgcttcttc	attctgggtt	tttgcttctg	ggtatctaata	60
tgtgcagagt	tcaatgatat	cttcgagccc	agctgggcca	ttgatcatgt	tatgaacgag	120
ggagagctgt	tgaagctgaa	gctcgacaac	ttttctggcg	ctggcttttc	ttccaaggca	180
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ttcttgggaa	atgcttcggg	tgagccttac	attgtgcaga	ctaataatcta	ctccaatggc	360
actggcaaca	gggaacaacg	catttacctc	tggttcgacc	ccaccgcaga	tttccattcc	420
tattcttttc	tgtggaacca	caagcaagtt	gtattctttg	tagacagtgt	t	471

<210> 831

<211> 391

<212> DNA

<213> Pinus radiata

<400> 831

taggatggcc	gggcaaagga	attgggttcaa	gagaatcgag	tttattgtta	tattcgtgggt	60
ttgcttaaac	tctgtttctg	cacgcccggc	atcatttgca	gaggatttta	aagtgcagtg	120
ggcagatgac	catgtcaaaa	caaggtcaga	taacaactcc	atcgatctca	tcttgatca	180

gaattcaggg	gcaggatttg	cctccaagaa	tcagtacatg	tttggacttg	taagcatgaa	240
catcaaactt	gtggcggtg	attctgcagg	gacagtcact	gctttttata	tgagctcgga	300
caaggaggaa	gtgcgagatg	aattggattt	cgagtttctg	gggaacagat	caggccagcc	360
ttatacagtc	caaacaaatg	tgtttgctct	c			391

<210> 832

<211> 304

<212> DNA

<213> Pinus radiata

<400> 832

catcccctgc	tttcgagggg	acacatggcg	tgtagcctta	gtgtgcctgt	ggactctcaa	60
tggaacttgg	tccacgaaaa	acacaatctg	atgagcggtc	cagaggatag	agtaagtgtg	120
aaactctgtc	gttggatcga	accagaggat	atgcctctgt	tcccttcac	ccacaccatt	180
tgaatagatg	ttcgtctgaa	gaccataagg	ctgtccactt	ctgttcccta	gaaattcaaa	240
atctagctcg	tccctattca	tgtctgtgtc	agaagacata	taataagcag	tgacaactcc	300
tgca						304

<210> 833

<211> 234

<212> DNA

<213> Pinus radiata

<400> 833

accattttaa	ccagccgatg	aagatctatt	cgagcctgtg	gaatgctgat	gactgggcca	60
cccagggggg	tctggagaaa	accgactggg	ccaaggcgcc	cttcacgcgc	tcctacaggg	120
aattccacgt	cgatgcctgt	gaggcttctg	ctccgcaatc	ggtgtgcgct	acgcaggggc	180
ggnggtggtg	ggatcaggag	gagttcagag	acctggatgg	gcggcaatgg	cggt	234

<210> 834

<211> 375

<212> DNA

<213> Pinus radiata

<400> 834

ggagcattcg	cctttgtaat	ggagtaaggg	aagaatgaga	gggcctgtcc	caccacttac	60
ttccattttt	aataaccctt	cttggttctc	catttaatcc	gtatttggtt	gcatcaatgt	120
tgaagccttt	gtaagtggag	ataaaaggag	aatggctcca	gtttatcttc	agccgcccac	180
cttgagtagc	ccagttatct	gcattccaga	ttgaagagga	taccctcatg	ggctgtttct	240
taggatatgg	gactcccagc	ctctcgttgt	tggggaatac	cctaatacga	acactgtcta	300
caaagaatac	aacttgcttg	tggttccaca	gaaaagaata	ggaatggaaa	tctgcggtgg	360
ggtcgaacca	gaggt					375

<210> 835

<211> 352

<212> DNA

<213> Pinus radiata

<400> 835

gcagctttct	cttgacaaat	ggacaggtac	tggcttccaa	tccaagggtg	gctacttggt	60
tggacatttc	agtatgcaga	taaagatggt	tcctgggtgac	tctgcaggcg	ttgtgactgc	120
cttttatatta	tcctctcaga	actctgaaca	tgatgaaata	gactttgagt	tcttgggcaa	180
taggtctgga	caaccttaca	ttctccaaac	taatgttttc	agtggaggaa	agggggacag	240
agagcaacgc	gtatatctct	ggtttgacct	cacaaaagac	tatcattcct	acactgtcct	300
ttggaatatg	catcagattg	tattctttgt	ggatgatgtc	cccatcagag	tt	352

<210> 836

<211> 368
 <212> DNA
 <213> Pinus radiata

<400> 836
 ctataagtcc ggattcttca gtgctgctat taagctacag gcagggttata cagctggagt 60
 cattgcagca ctctatctct ccaataacca ggagtaccca ggtcaccatg acgaaataga 120
 cattgagttc ctggggacaa caccaggaaa accctacacc ttacagacca atgtttacat 180
 aaatggaaca ggggatgggc aggttctcac aggcaggagg ttgaagtttc atctctgggt 240
 tgaccaact gaagacttcc ataactacag ctttctctgg actccaagtt atatcatctt 300
 ctatgtagat gatattgcta tccgaaagta cccaagaaga atttcatcta cttatccatt 360
 gaggccac 368

<210> 837
 <211> 402
 <212> DNA
 <213> Pinus radiata

<400> 837
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 ttccattttt aataaccctt cttggttctc catttaatcc gtatttggtt gcatcaatgt 120
 tgaagccttt gtaagtggag ataaaaggag aatggctcca gtttatcttc agccgcccac 180
 cttgagtagc ccagttatct gcattccaga ttgaagagga taccctcatg ggctgtttct 240
 taggatattg gactcccagc ctctcgttgt tggggaatac cctaatacga acactgtcta 300
 caaagaatac aacttgcttg tggttccaca gaaaagaata ggaatggaaa tctgcggtgg 360
 ggtcgaacca gaggtaaatg cgttggtccc tgtcgcagtg gc 402

<210> 838
 <211> 389
 <212> DNA
 <213> Pinus radiata

<400> 838
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 aatgctgac aatatgggtgc ccaatgtact gttatttctc ttggtagcgg caatggctgc 120
 tactgctacc tcacctccga agcctgtgga tgtgccattc caaaaaaact atgtaccac 180
 ctgggcttct gatcatatca agtacattaa tggggggaac gaagcgcagc tttctcttga 240
 caaatggaca ggtactggct tccaatccaa gggtagctac ttgtttggac atttcagtat 300
 gcagataaag atggttctct gtgactctgc aggcgttgtg actgcctttt atttatcctc 360
 tcagaactct gaacatgatg aaatagact 389

<210> 839
 <211> 451
 <212> DNA
 <213> Pinus radiata

<400> 839
 ggatttagga gtgaggtatc cattcaacca gcccatgaaa atctattcaa gcttgtggaa 60
 tgctgatgac tgggctacaa ggggtgggtt ggagaagaca gactggagca aggcaccctt 120
 tgttgcatca tacaaggat tccacgtgga tgggtgtgag gcgtctatgc ctactctgc 180
 ttgtccaact ttaggccgtc gatggtggga tcagaaagcc ttcgatgacc ttgatggaca 240
 gcaatggagg aaactgaagt gggttcgtga taggtacacc atatacaact actgcactga 300
 cagagtgagg tctcctaaaa tgtctccaga gtgtaccana gaccgtgaca tctaatagca 360
 cagcctcctt gggatagata gctatatttt tattctattc ttcttcgaca tatggctggt 420
 ctaattatgt tataactgcc atttcgtagt a 451

<210> 840

<211> 459

<212> DNA

<213> Pinus radiata

<400> 840

gaataatttc	aggtagtgga	ttcaagtctt	tggaggccta	taagtccgga	ttcttcagtg	60
ctgctattaa	gctacaggca	ggttatacag	ctggagtcac	tgcagcactc	tatctctcca	120
ataaccagga	gtacccagggt	caccatgacg	aaatagacat	tgagttcctg	gggacaacac	180
caggaaaacc	ctacacctta	cagaccaatg	tttacataaa	tggaaacaggg	gatgggcagg	240
ttctcacagg	cagggagttg	aagtttcatc	tctggtttga	cccaactgaa	gacttccata	300
actacagcct	tctctggact	ccaagttata	tcattcttcta	tgtagatgat	attgctatcc	360
gaaagtaccc	aagaagaatt	tcattctactt	atccattgag	gccactttgg	gtatatggat	420
caatatggga	tgcttctctt	tgggctactg	aaaatggca			459

<210> 841

<211> 476

<212> DNA

<213> Pinus radiata

<400> 841

tttttttttt	gaatcatcaa	aagaatctcg	cttttgtatt	accagtaccc	taaatgaatt	60
gattgatacc	ctctaattt	ttacatgtgt	gtctgagaaa	gaatgaaaga	attaatgtaa	120
tagaaatgaa	tcagaatact	tggaaaggaaa	gaattcagag	ttcattctct	gaattcaaag	180
gattgaggtt	ttattttgcat	tcgaggaggcg	gtccctgggg	gaatctcttg	gtgtctgcac	240
aataatcgta	gatcatgtag	ttctttcgta	cccactgtag	cctctgcctc	tggtcttget	300
tcgattccaa	agccacctcc	tctgcggcgg	cgtcaaaaga	agaagtagcg	gcagcattga	360
aattgcggaa	ggatgcaaca	aaggagactt	tagtccagtc	ggtcttcaca	agcccacccc	420
tggttgccca	atcatctgca	ttccaaaggc	tggagtagac	cctcattgct	ttgggt	476

<210> 842

<211> 293

<212> DNA

<213> Pinus radiata

<400> 842

ggctgatcat	ggcagtaatc	gtaagtcaaa	tatttgcgtg	tcacccacct	gtaatatctc	60
ctctgtttct	tcgtcagagt	ccgcgcctcg	ggcttatccc	accagtgcct	tgcacttgca	120
ttattactgt	gagcacagga	cgattgggtc	gtgttttgat	cctcccattt	gcagccgagg	180
ccatggaatt	tcttgtacga	agatacgaac	ggagcagccg	cccagttggt	cttctcaagg	240
ccgcctctcg	ttgcccagtt	gtctccattc	caaatgctgg	agaacatgta	cat	293

<210> 843

<211> 460

<212> DNA

<213> Pinus radiata

<400> 843

gtgttgattg	gtctgattgc	ctgtgtttct	tgccagtcgg	acggtgatga	ttcatctccc	60
aagggttttg	atgataattt	tcagatattg	tgggctcagg	atcacttcag	gacctctgaa	120
aatggtcaag	tatggcacct	ggttcttgac	cagaactcag	gttctgggtt	caaatcgaag	180
aacaagtata	gattcggatg	gttcagcatg	aagctcaagc	tcgtaccagg	agactctgca	240
ggagttgtca	ctgcttatta	tatgtcttct	gacacagaca	tgaataggga	cgagctagat	300
tttgaatttc	tagggaacag	aagtggacag	ccttatgggtc	ttcagacgaa	catctattca	360
aatggtgtgg	gtggaaggga	acagaggcat	atcctctggt	tcgatccanc	gacagagttt	420
tacacttact	ctatcctctg	gaacgctcat	cagattgtgt			460

<210> 844

<211> 491
 <212> DNA
 <213> Pinus radiata

<400> 844

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tgaaatagac	tttgagttct	tgggcaatag	gtctggacaa	ccttacattc	tccaaactaa	120
tgttttcagt	ggaggaaagg	gggacagaga	gcaacgcgta	tatctctggt	ttgacccac	180
aaaagactat	cattcctaca	ctgtcctttg	gaatatgcat	cagattgtat	tctttgtgga	240
tgatgtcccc	atcagagttt	tcaagaacag	caaggattta	ggagtgaggt	atccattcaa	300
ccagcccatg	aaaatctatt	caagcttgtg	gaatgctgat	gactgggcta	caaggggtgg	360
gttggagaag	acagactgga	gcaaggcacc	ctttgttgca	tcatacaagg	gattccacgt	420
ggatgggtgt	gaggcgtcta	tgcttcactc	tgcttgtcca	actttaggcc	cgtcgatggt	480
gggatcaaga	a					491

<210> 845
 <211> 413
 <212> DNA
 <213> Pinus radiata

<400> 845

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taggcaatgc	tgattaatat	ggtgcccaat	gtactgttat	ttctcttggg	agcggcaatg	120
gctgctactg	ctacccacc	tccgaagcct	gtggatgtgc	cattccaaaa	aaactatgta	180
cccacctggg	cttctgatca	tatcaagtac	attaatgggg	ggaacgaagc	gcagctttct	240
cttgacaaat	ggacaggtac	tggcttccaa	tccaagggta	gctacttgtt	tggacatttc	300
agtatgcaga	taaagatggg	tcttgggtgac	tctgcaggcg	ttgtgactgc	cttttattta	360
tcctctcaga	actctgaaca	tgatgaaata	gactttgagt	tcttgggcaa	tag	413

<210> 846
 <211> 513
 <212> DNA
 <213> Pinus radiata

<400> 846

gggagacaga	gttgggtaaa	gtggatagca	attatcatta	tcccaaaacc	caagcaatga	60
gggtctactc	cagccttttg	aatgcagatg	attgggcaac	caggggtggg	cttgtgaaga	120
ccgactggac	taaagctccc	tttgttgcac	ccctccgcaa	tttcaatgct	gccgctactt	180
cttcttttga	tgccgtcgca	gaggaggtgg	ctttggaatc	gaaccaagaa	cagaggcaga	240
ggctccagtg	ggtacgaaaag	aactacatga	tctacgatta	ttgtgcagac	accaagagat	300
tccccagggg	accgcctccc	gattgcaaata	aaaacctcaa	tcctttgaat	tcagagaatg	360
aactctgaat	tctaccttcc	aagtattctg	attcattttct	attacattaa	ttctcattct	420
ttctcagaca	cacatgtaaa	atattagagg	gtatcaatca	tttcattttg	gtactgctat	480
acaaaagcga	gattcttttg	atgaaaaaaa	aaa			513

<210> 847
 <211> 362
 <212> DNA
 <213> Pinus radiata

<400> 847

ctacacctta	cagaccaatg	tttacataaa	tggaacaggg	gatgggcagg	ttctcacagg	60
cagggagtgt	aagttttcatc	tctggtttga	cccaactgaa	gacttccata	actacagcct	120
tctctggact	ccaagttata	tcactttcta	tgtagatgat	attgctatcc	gaaagtaacc	180
aagaagaatt	tcacttactt	atccattgag	gccactttgg	gtatatggat	caatatggga	240
tgcttctctc	tgggctactg	aaaatggcaa	atacagagca	gattacagat	atcagccatt	300
tggttgctaag	ttctctaagt	tcattctcag	tggctgcctc	gtttcagact	ccacatgctc	360

ag

362

<210> 848
 <211> 417
 <212> DNA
 <213> Pinus radiata

<400> 848
 ctcgtttctg gaactgctgc tctgcatcac aaactctttt cccaatccct aatcgacatc 60
 gacatcgaca tcgacatcga cacacctctt cacctcctct ttcttttatt ggctcctcg 120
 gcagctcttg cttctgcaaa tttctacaat gatgtcgaca ttacatgggg taatgatcgt 180
 gctaaaatca ttgacaatgg acaagagttg cagcttactc ttgaccgctc ttcagggttg 240
 ggtattcaat ccaagcaaga gtatctatit gccaaagattg atatccaaat caagttggta 300
 cctggcaact ctgcaggcac agtcactacc ttttatctat catctcaagg tcccaaacac 360
 gacgaaatag acttcgaatt tctgggcaac ctgtccggag atccttatat tttgcac 417

<210> 849
 <211> 291
 <212> DNA
 <213> Pinus radiata

<400> 849
 atattatgca cactaatgtc ttcgctcaag gccttggtta tcgtgagcaa caattttact 60
 tgtggttcga cccaaccttg gatttccaca cttactcctg gctctggaca tcaaaccaaa 120
 tcatattctc tgtagacgag actcccgttc gagtgtttta gaacagggag acagagttgg 180
 gtaaagtgga tagcaattat cactatccta agagccaagc aatgaaggtc tattcaagcc 240
 tctggaatgc agatgattgg gcgactagag gtggactcgt caagacagac t 291

<210> 850
 <211> 299
 <212> DNA
 <213> Pinus radiata

<400> 850
 actgtcccaa ggggagccgc tccagctcaa gctcgatccc gcttctggtg cagggtttgc 60
 ttccaagcac acatacattt tcggaaaagt gaatgggcaa attaaactcg ttcttgga 120
 ctctgctggc accggtattg ctttctatat gtcttcccaa ggggacgaac acgatgaatt 180
 tgactttgaa tttttgggta acatttctgg acagccatac actgtgcaga ccaatgttta 240
 ttcaaaaggc agtggcaata gggagcaacg catgttcttg tggtttgacc caactgtag 299

<210> 851
 <211> 359
 <212> DNA
 <213> Pinus radiata

<400> 851
 gtgttcagta gtctgattgc tagtgtttgt tcccagtcctc aaggggatga ttcattctgct 60
 aagggttttg atgataattt tcagataatg tgggttgagg atcatttcag gacctctgaa 120
 aatggccaag tatggcacct ggttcttgac cagaactcag gttctgggtt caagtccaag 180
 tataagtaca gattcggatg gtttagcatg aagctcaagc tcgtaccggg agactctgca 240
 ggagttgtca ctgcttatta tatgtcttct aacaccgaca tgaataggga cgagctggac 300
 tttgagtttc tggggaacag aagtggagag ccatatgctc tgcagacaaa catctatgc 359

<210> 852
 <211> 347
 <212> DNA
 <213> Pinus radiata

<400> 852

gtggaattgc	ttgtaggagg	cggtgaaggg	cgccttgctc	caatcggttt	tctccagacc	60
ccctcgggtg	gcccagttat	ccgcattcca	caggctcgaa	tagatcttca	ttgggtgggt	120
gaaaggggaa	cttatcccca	ggttcttgca	gttcttgaac	acgcggattg	gtaccgagtc	180
cacaaaaaaaa	ctgcacaaaa	aacccatcac	acacatcaat	attcatgaac	gttccagtgc	240
caaattttga	aaagtttttt	tggtttttta	ggatttttatt	tgtttagaat	tttgggaagga	300
ttgtgaattt	ttcagaataa	aaatatttaa	aaaattttca	aatatct		347

<210> 853

<211> 434

<212> DNA

<213> Pinus radiata

<400> 853

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ctattcgagc	ctgtggaatg	ctgatgactg	ggccacccga	gggggtctgg	agaaaaccga	120
ctggggccaag	gcgccttcca	tgcctccta	caggggaattc	cacgtcgatg	cctgtgaggc	180
ttctgctccg	caatcggtgt	gcgctacgca	ggggcggcgg	tggtagggatc	aggaggagtt	240
cagagacctg	gatgggcggc	aatggcggtg	cttgaaatgg	gtgaggaagc	actacaccat	300
ctacaattac	tgcactgaca	cgcccagaaa	caagcaaattg	cctccggaat	gtgttcgcga	360
tcgcgacaat	atgtagtcca	gttatcctca	tcatttgatg	ctacccatgg	ctgaataatc	420
cgtggtcggg	taat					434

<210> 854

<211> 274

<212> DNA

<213> Pinus radiata

<400> 854

attcaatcca	agcaagagta	tctattttgcc	aagattgata	tccaaatgaa	gttggtacct	60
ggcaactctg	caggcacagt	cactactttt	tatctatcat	ctcaaggctc	caaacacgac	120
gaaatagact	ttgaatttct	gggaaacctg	tctggagatc	cttatatttt	gcacactaat	180
gtctttgctc	aaggccttgg	tggacgtgag	cagcaatttt	acttgtgggt	cgacccaacc	240
ctggatttcc	acacttactc	cgtgctctgg	actt			274

<210> 855

<211> 366

<212> DNA

<213> Pinus radiata

<400> 855

ataagctggt	gttaaaatgg	cttcttttgag	tatgcagagc	tgcttcttaa	ttctggctct	60
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agatcatggt	atgtatgagg	gagagctggt	gaagcttaag	ctggacaata	tttccggggc	180
tggctttgct	tccaagacaa	catatttggt	tggaaaagca	ggggcacaga	ttaagctcgt	240
tcagggtgac	tctgcaggca	cagttactgc	tttttatatg	tcttctgagg	ggactctgca	300
cgacgaattc	gatttcgaat	tcttgggaaa	tgcttcgggt	gagccttaca	ttgggcagac	360
gaatat						366

<210> 856

<211> 398

<212> DNA

<213> Pinus radiata

<400> 856

gtccagtcga	atcggtctn	gaggatggca	ttcgtaggtt	gtcaagaagg	gggtcgtgac	60
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atgcactgng	ctcttctttg	tatcttttga	acgttgtgca	acctgctcgt	gagctctcaa	120
tgtgcgtnt	tngacgattt	cttctacccc	agttgggctg	ttgatcatgt	catgtcccaa	180
ggagagtgc	tccagctcaa	gcttgataac	atttctgggt	caggatttgc	ttngaagagc	240
acatacatct	tccgaaaagc	aaatgtgcag	ataaagctcg	ttcccgggga	ctctgctggc	300
actgttactg	cattctatat	gtcttcccaa	ggcgatcagc	atgacgaatt	cgactttgaa	360
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<210> 857

<211> 183

<212> DNA

<213> Pinus radiata

<400> 857

cagtacatgt	ttggacttgt	aagcatgaac	atcaaacttg	tggcgggtga	ttctgcaggg	60
acagtcactg	ctttttatat	gagctcggac	aaggaggaag	tgcgagatga	attggatttc	120
gagtttctgg	ggaacagatc	aggccagcct	tatacagtcc	aaacaaatgt	gtttgctctc	180
ggg						183

<210> 858

<211> 464

<212> DNA

<213> Pinus radiata

<400> 858

cagactcgtt	gggtgcttac	tgaaagatag	ctagcaggag	gctgggtgctt	ttctaggcaa	60
tgctgatcaa	tatggtgccc	aatgtactgt	tatttctctt	ggtagcggca	atggctgcta	120
ctgctacccc	acctccgaag	cctgtggatg	tgccattcca	aaaaaactat	gtaccacact	180
gggcttctga	tcatatcaag	tacattaatg	gggggaacga	agcgcagctt	tctcttgaca	240
aatggacagg	tactggcttc	caatccaagg	gtagctactt	gtttggacat	ttcagtatgc	300
agataaagat	ggntcctggg	gactctgcag	gcgttgtgac	tgcccttttat	ttatcctctc	360
agaactctga	acatgatgaa	atagactttg	agttcttggg	caatagggtct	ggacaacctt	420
acattctcca	aactaatgtt	ttcagtggag	gaaaggggga	caga		464

<210> 859

<211> 412

<212> DNA

<213> Pinus radiata

<400> 859

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accaaattat	attttctgta	gacgggagtc	ctgttccagc	gtttaagaac	agggagacag	120
agttgggtaa	agtggatagc	aattatcatt	atcccaaaac	ccaagcaatg	aggggtctact	180
ccagcctttg	gaatgcagat	gattgggcaa	ccaggggtgg	gcttgtgaag	accgactgga	240
ctaaagctcc	ctttgttgca	tccctccgca	atttcaatgc	tgccgctact	tcttcttttg	300
atgccgccgc	agaggaggtg	gctttggaat	cgaaccaaga	acagaggcag	aggctccagt	360
gggtacgaaa	gaactacatg	atctacgatt	attgtgcaga	caccaagaga	tt	412

<210> 860

<211> 376

<212> DNA

<213> Pinus radiata

<400> 860

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ccaatgtatt	tacgggcggg	aagggtgaga	gagagcaccg	aatatacctc	tggttcgacc	120
ccaccaagga	ttaccattcc	tatgctgtgc	tctggaacat	gtaccaaaatt	gcatttttgg	180
tagatgaggt	accaatccgg	gtgttcaaga	acagcaagga	tctgggcgtg	aggtacccat	240

ttaaccagcc	gatgaagatc	tattcgagcc	tgtggaatgc	tgatgactgg	gccacccgag	300
ggggtctgga	gaaaaccgac	tgggccaagg	cgcccttcac	cgctcctac	agggaattcc	360
acgtcgatgc	ctgtga					376

<210> 861
 <211> 536
 <212> DNA
 <213> Pinus radiata

<400> 861						
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gtatctaatt	gtgcagagtt	caatgatatc	ttcgagccca	gctgggcgat	tgatcatgtt	120
atgaacgagg	gagagctgtt	gaagctgaag	ctcgacaatt	tttctggcgc	tggcttttct	180
tccaaggcca	catacttggt	tggaaaagta	ggggcgcaga	ttaaactcgt	ccccggcgac	240
tctgcgggca	cagtgactgc	attttatatg	tcttctgagg	ggacattgca	tgacgaattc	300
gatttcgaat	tcttgggaaa	tgcttcgggt	gagccttaca	ttgtgcagac	taatatctac	360
tccaacggca	ctggcgacag	ggaacaacgc	atttacctct	ggttcgaccc	caccgcagat	420
ttccattcct	attcttttct	gtggaaccac	aagcaagtgt	tattctttgt	agacagtgtt	480
ccgattaggg	tattcccca	caacgagagg	ctgggagtcc	catatcctaa	gaaaca	536

<210> 862
 <211> 358
 <212> DNA
 <213> Pinus radiata

<400> 862						
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ggttcgggat	ttcaatcgta	taaggagtgt	ttgtttggaa	gcgttgatat	ctccatgaaa	180
ctggtgcccc	gaaattccgc	cggtagcgtt	acgacatatt	atctatcttc	aacaggtgag	240
gggcacgacg	aaattgatat	ggagttccta	ggaaatgttt	ctggggagcc	ctacattctg	300
catacaaaca	tttatgtcaa	tggttcagcc	cgataaagag	cagcagttct	atttatgg	358

<210> 863
 <211> 322
 <212> DNA
 <213> Pinus radiata

<400> 863						
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ccaatgtatt	tacgggcggg	aagggtgaga	gagagcaccg	aatataacct	tggttcgacc	120
ccaccaagga	ttaccattcc	tatgctgtgc	tctggaacat	gtaccaaatt	gcatttttgg	180
tagatgaggt	accaatccgg	gtgttcaaga	acagcaagga	tctgggcgtg	aggtagccat	240
ttaaccagcc	gatgaagatc	tattcgagcc	tgtggaatgc	tgatgactgg	gccacccgag	300
ggggtctgga	gaaaaccgac	tg				322

<210> 864
 <211> 372
 <212> DNA
 <213> Pinus radiata

<400> 864						
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tctactactc	cattctgctg	ccatggctgc	cacgcccag	ccagtgagtg	tgccttcggg	180
caaaaattac	ggtgcaagct	ggggctcaga	ccacatcaaa	gaattccatg	gaggctcga	240
ggtcgaactt	cttctcaaca	aacagtatgg	tgccgggttc	gaatccaagg	ggacatat	300

gtttgggcat ttcagcatgc agattaagtt ggttcctggt gactcggctg gcactgtcac 360
ggccttctat ct 372

<210> 865
<211> 519
<212> DNA
<213> Pinus radiata

<400> 865
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gtatctaatt gtgcagagtt caatgatata ttcgagccca gctgggcat tgatcatggt 120
atgaacgagg gagagctgtt gaagctgaag ctcgacaact ttctggcgcg tggcttttct 180
tccaaggcaa catacttgtt tggaaaagta ggggcgcgaga ttaaactcgt tcccgcgagc 240
tctgcgggca cagtgcactgc attttatatg tcttctgagg ggacattgca tgacgaattc 300
gatttcgaat tcttgggaaa tgcttcgggt gaggcttaca ttgtgcagac taatatctac 360
tccaacggca ctggcaacag ggaacaacgc atttacctct ggctcgaccc caccgcagat 420
ttccattcct attcttttct gtggaaccac aagcaagttg tattctttgt agacagtgtt 480
ccgattagggt tattccccaa caacgagagg ctggggagtc 519

<210> 866
<211> 240
<212> DNA
<213> Pinus radiata

<400> 866
ctctcatcac agggttcgaa ccgcgacgag ctggatttct agtttctggg gaataaatct 60
ggagatccta ccattcttca aactaatgta tacgcaaagt gaaaaggcga ccgcgagcag 120
cgaatatacc tctggtttga tccatccact gaattccaca cctaccgtgt tatctggaac 180
gctgcgtata tcttatttat ggtggatgag gtgcctgtta gagtttttat gaacaacaac 240

<210> 867
<211> 392
<212> DNA
<213> Pinus radiata

<400> 867
tgtttgacaga gatttggttg ggcaatgctg atcaagatgg tccccaaact gttgctgggtg 60
ctcttggttag ctgcaatggc tgctatggct gcctcacctc ctaagcctgt ggacgtacca 120
tccccaaaaa attatgtacc cacttgggct gctgatcata tcaagtacat caatgggtgga 180
aatgagggttc agctttctct agacaaatgg acagggtactg gcttccaatc caagggtacc 240
tacttggttg gacacttttag tatgcagata aagatgggtc ctggtgactc tgcaggcact 300
gtgactgcct tttatctatc ctcccagaat gccgagcacg atgaaataga ttttgagtgc 360
ctgggcaata ggtctggaca gccttacatt ct 392

<210> 868
<211> 605
<212> DNA
<213> Pinus radiata

<400> 868
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atgtgctcgg aagcgatgaa gactgcccac tttctgggtc tgtttctcat tctactactc 120
cattctgctg ccattggctgc cagccccaag ccagtgcgtg tgcccttcgg caaaaattac 180
ggtgcaagct ggggctcaga ccacatcaaa gaattccatg gaggtcgaaa ggtcgaaactt 240
cttctcaaca aacagtatgg tgcgggggtc gaatccaagg ggacatatct gtttgggcat 300
ttcagcatgc agattaagtt ggttcctggt gactcggctg gcactgtcac ggcttctat 360
ctttcttctc aaactgcaga gcacgacgag atagatttct aatttttggg caacaggtct 420

ggacaacctt	acattcttca	gaccaatgta	ttcacaggag	gcaaggggtga	gagagagcat	480
cgcataatc	tctgggttcga	tcccaccaag	gattaccatt	cctatgcagt	actctggaac	540
atgtaccaga	tcgtgttttt	tgtggactcg	gtaccaatcc	gcgtgttcaa	gaactgcaag	600
gacct						605

<210> 869
 <211> 528
 <212> DNA
 <213> Pinus radiata

<400> 869						
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atatctactc	caacggcact	ggcaacaggg	aacaacgcat	ttacctctgg	ttcgacccca	120
cggcagattt	ccattcctat	tcttttttgt	ggaaccacaa	gcaagttgta	ttctttgtag	180
acagtgttcc	gattagggta	ttccccaa	acgagaggct	gggagtccca	tatcctaaga	240
aacagcccat	gagggtatcc	tcttcaatct	ggaatgcaga	taactgggct	actcaagggtg	300
ggcggctgaa	gataaactgg	agccattctc	cttttatctc	cacttacaaa	aggttcgaca	360
tcgatgcaaa	ccaatacggg	ttaaatggag	aatcgagagg	ggttattgag	aatggaagta	420
agtgggtggg	caggccctct	cattcttccc	ttactccatt	acaaaggcga	atgctccgat	480
gggtggatcg	gaactatatc	atctatgact	actgcaagga	ttcgacca		528

<210> 870
 <211> 277
 <212> DNA
 <213> Pinus radiata

<400> 870						
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gcaagaacct	ggggataagg	ttccctttca	accaaccaat	gaagatctat	tcgagcctgt	120
ggaatgcgga	taactgggcc	acccgagggg	gtctggagaa	aaccgattgg	agcaaggcgc	180
ccttcaccgc	ctcctacaag	caattccacg	tcgatgcctg	cgaagcttct	gtttcggagt	240
cgggtgtgcgc	tacgcagggg	cggcgggtgg	gggatca			277

<210> 871
 <211> 501
 <212> DNA
 <213> Pinus radiata

<400> 871						
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gactgagctg	ctcctcaaca	aacagtatgg	tgcgggggtt	gagtcgaagg	ggacatat	120
atttgggcat	ttcagtatgc	agataaagct	gggtgcccgg	gattccgctg	gcactgtcac	180
cgccttttat	ctttcttctc	agactgcaga	gcacgatgag	atagactttg	aattcttggg	240
gaacaagtgc	ggggaacctt	acattcttca	gaccaatgta	tttacgggcg	ggaagggtga	300
gagagagcac	cgaatatacc	tctgggttcga	ccccaccaag	gattaccatt	cctatgctgt	360
gctctggaac	atgtacaaa	ttgcattttt	ggtagatgag	gtaccaatcc	gggtgttcaa	420
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cctgtggaat	gctgatgact	g				501

<210> 872
 <211> 540
 <212> DNA
 <213> Pinus radiata

<400> 872						
gcgattctat	tctaagcaga	ccagggtatc	gattggagcc	ttcagcatta	tctgctaaat	60
ttgatcgata	tcgtttgcat	ctatggagg	ttctagggct	tttaagttatg	tccatttcct	120

tttgattgcc	attatctgca	cagttatata	tcccacagtt	tatgcagacg	tctacagtga	180
tattgatgta	acatggggcg	aaaacaacgc	ttgggtattg	aacaatggcc	agggattgca	240
gctttctctt	accaattatt	ctgggttcggg	atttcaatcg	tataaggagt	ttttgtttgg	300
aagcgttgat	atctccatga	aactgggtgcc	cggaaattcc	gctgggtaccg	ttacgacata	360
ctatttatct	tctacaggtg	aggggcacga	cgaaattgat	atggagtttt	taggaaatgt	420
ttccgggcag	ccttacattc	tgacacaaa	catttatgtc	aatgggtcag	ccaataaaga	480
gcagcagttc	tatttatggg	tcgatccaac	ttcagatttc	cacaattact	ccattctctg	540

<210> 873

<211> 397

<212> DNA

<213> Pinus radiata

<400> 873

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tgctcggaag	cgatgaagac	tgcccaattt	ctgggtctgt	ttctcattct	actactccat	120
tctgctgcca	tggtcgccac	gcccgaagcca	gtgagtgtgc	ccttcggcaa	aaattacggt	180
gcaagctggg	gctcagacca	catcaaagaa	ttccatggag	gtcgaaaggt	cgaacttctt	240
ctcaacaaac	agtatggtgc	ggggttcgaa	tccaagggga	catatttgtt	tgggcatttc	300
agcatgcaaa	ttaagttggg	tcctgggtgac	tcgggtggca	ctgtcacggc	cttctatctt	360
tcttctcaaa	ctgcagagca	cgacgagata	gatttcg			397

<210> 874

<211> 371

<212> DNA

<213> Pinus radiata

<400> 874

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ttgcttctgg	gcatcccat	gtgcacagtt	taatgatata	ttcgagccca	gctgggcgac	120
agatcatggt	atgtatgagg	gagagctggt	gaagcttaag	ctggacaata	tttccggggc	180
tggctttgct	tccaagacaa	catatttgtt	tggaaaagca	ggggcacaga	ttaagctcgt	240
tccaggtgac	tctgcaggca	cagttactgc	tttttatatg	tcttctgagg	ggactctgca	300
cgacgaattc	gatttcgaat	tcttgggaaa	tgcttcgggt	gagccttaca	ttgtgcaaac	360
gaatatctac	t					371

<210> 875

<211> 355

<212> DNA

<213> Pinus radiata

<400> 875

ctttgtagac	gatgtgcccg	tacgggtatt	tgggaacaat	gagaaagtgg	gagtcccgtg	60
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tcaaggtggc	ctcgtcaaga	ccgattggag	ccacgcacct	ttcgtttcca	catacacaaa	180
tttcagcatc	gatgcctgtg	attattcctt	gaaaacgacc	tgctcttcgt	gggtgggatga	240
gcttgcttac	gcttcgctcg	atgcaaagca	gaggctgaaa	ctgaagtggg	tgcaagagaa	300
atacatgact	tacgattact	gcaaagattt	agccagggtt	cccacggctc	cgcca	355

<210> 876

<211> 337

<212> DNA

<213> Pinus radiata

<400> 876

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ctcttggtag	ctgcaatggc	tgctatggct	gcctcacctc	ctaagcctgt	ggacgtacca	120

ttcccaaaaa	attatgtacc	cacttgggct	gctgatcata	tcaagtacat	caatgggtgga	180
aatgagggttc	agctttctct	agacaaatgg	acagggtactg	gcttccaatc	caaggggtacc	240
tacttgtttg	gacactttag	tatgcagata	aagatgggttc	ctggtgactc	tgcaggcact	300
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<210> 877

<211> 558

<212> DNA

<213> Pinus radiata

<400> 877

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gcttcttaat	tctggctctt	tgcttctggg	catcccatg	tgcacagttt	aatgatatact	120
tgcagcccag	ctgggcgaca	gatcatgtta	tgtatgaggg	agagctggtg	aagcttaagc	180
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accaagttgt	tttctttgtg	gatagtgttc	cgattcgggt	attccccaac	aacgagcggc	540
tgggagtccc	atatccga					558

<210> 878

<211> 400

<212> DNA

<213> Pinus radiata

<400> 878

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aagcattaca	gagataagtc	atcttgtgac	tgcaaaacag	taacgatgac	ataaataaca	120
aagcatatct	aagaagaata	gattacagaa	gatataattaa	tatatctata	aataagagcc	180
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cctcactttg	tcagcgcagt	agttatagat	ggtgtaactg	ttacgaaccc	ccttcagttt	300
tctccattgc	attccatcaa	ggtcacgcgaa	ggccttttga	tcccaccacc	gacgaccctg	360
agtagcacia	gtcgactcag	tacagaggcc	tcacacccat			400

<210> 879

<211> 500

<212> DNA

<213> Pinus radiata

<400> 879

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attctacttg	tggttcgacc	caaccctggc	ttttcacact	tactccgtgc	tctggacacc	120
aaatcaaatt	acattgtccg	tggacgggat	tcctgttcgt	gtgtttaaaa	acagggagac	180
agaattggat	aaaacagata	gcaattatca	ttatccgaag	agccaagcaa	tgaggatgta	240
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gactaaagcc	ccctttgttg	catctttcag	caacttcagt	gctgcgactt	cttcttctaa	360
cttcgacgga	gaggatgttt	tggattcgaa	cgaagagcag	aagcttcaat	gggtgcgaaa	420
gaactatatg	atctacgatt	actgtgcaga	cacaaaaagg	ttccccccag	ggctacctgc	480
agaatgcaaa	tgagcgctct					500

<210> 880

<211> 547

<212> DNA

<213> Pinus radiata

<400> 880

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cttctgggtgc	aggatttgct	tcgaagagca	catacttggt	cggaaaagtg	aatgttcaga	180
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ggttcgatcc	aactgcgaat	ttccattcct	actcctttct	ctggaatcgc	caccaatctg	420
ttttctttgt	ggacgatgtg	cctattcggg	tgttttccaa	caatgagaaa	agaggagtcc	480
catttcctca	aaccgcacct	atgggcgtat	actcttcaat	atggaacgca	gatgactggg	540
ctactca						547

<210> 881

<211> 197

<212> DNA

<213> Pinus radiata

<400> 881

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tttagtatgc	agataaagat	ggttcctggg	gactctgcag	gcactgtgac	tgctttttat	120
ctatcctccc	agaatgccga	gcacgatgaa	atagattttg	agttcctggg	caataggtct	180
ggacagcctt	acattct					197

<210> 882

<211> 622

<212> DNA

<213> Pinus radiata

<400> 882

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tctattcctt	tcatcccttg	cctacactaa	tctgcacttg	gatctcaa	tcaagttcct	120
ctattttctat	taaccataa	ttatggacac	aggaacgccc	ctcctctttc	ttttcttatt	180
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gtctcaaggt	cccaagcacg	acgaaataga	ctacgaattt	ctaggcaacc	tctctggaga	480
tccctatatt	atgcacacca	atatcttcgc	tcaaggcctt	ggcaatcgtg	aacagcaatt	540
ctacttgtgg	ttcgacccaa	ccctggcttt	tcacacttac	tccgtgctct	ggacacccaaa	600
tcaaattaca	ttgtccgtgg	ac				622

<210> 883

<211> 223

<212> DNA

<213> Pinus radiata

<400> 883

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cgtaccattc	ccaaaaaatt	atgtaccac	ttgggctgct	gatcatatca	agtcacaaat	120
ggtggaatg	aggttcagct	ttctctagac	aaatggacag	gtactggctt	ccaatccaag	180
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<210> 884

<211> 304

<212> DNA

<213> Pinus radiata

<400> 884

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tctggaacat	gcatcagatc	gtattctttg	tggacgatgt	ccccatcaga	gttttcaaga	120
atagcagggg	cttatgagtg	aggtacccat	ttaaccagcc	catgaaaata	tactcaagcc	180
tgtggaatgc	tgatgactgg	gccacaaggg	gtgggctgga	gaagacagat	tggagcaaag	240
caccatttgt	tgcatcatat	aggggattcc	acgtggatgg	gtgtgaggcc	tctgtaactg	300
agtc						304

<210> 885

<211> 367

<212> DNA

<213> Pinus radiata

<400> 885

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attccacgtg	gatgggtgtg	aggcctctgt	aactgagtcg	acttgtgcta	ctcaggggtcg	120
tcggtggtgg	gatcaaaaagg	ccttcgatga	ccttgatgga	atgcaatgga	gaaaactgaa	180
gggggttcgt	aacagttaca	ccatctataa	ctactgcgct	gacaaagtga	ggtctccagc	240
aatgcctcca	gagtgtacca	gagaccgtga	catttaatat	cagcctctta	ggggctctta	300
tttatagata	tattaatata	tcttctgtaa	tctattcttc	ttagatatgc	tttgttattt	360
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<210> 886

<211> 358

<212> DNA

<213> Pinus radiata

<400> 886

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agggtcgtcg	gtgggtggat	caaaaggcct	tcgatgacct	tgatggaatg	caatggagaa	180
aactgaaggg	ggttcgtaac	agttacacca	tctataacta	ctgcgctgac	aaagtggagg	240
ctccagcaat	gcctccagag	tgtaccagag	accgtgacat	ttaatagcag	cctcttaggg	300
gctcttattt	atagatatat	taatatatct	tctgtaatct	attcttctta	gatatgct	358

<210> 887

<211> 343

<212> DNA

<213> Pinus radiata

<400> 887

aaggggtggg	ctggagaaga	cagattggag	caaagcacca	tttgttgc	catacagggg	60
attccacgtg	gatgggtgtg	aggcctctgt	aactgagtcg	acttgtgcta	ctcaggggtcg	120
tcggtggtgg	gatcaaaaagg	ccttcgatga	ccttgatgga	atgcaatgga	gaaaactgaa	180
gggggttcgt	aacagttaca	ccatctataa	ctactgcgct	gacaaagtga	ggtctccagc	240
aatgcctcca	gagtgtacca	gagaccgtga	catttaatat	cagcctctta	ggggctctta	300
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<210> 888

<211> 517

<212> DNA

<213> Pinus radiata

<400> 888

ctcctacatg	tttgagcgat	tttactcatt	cgtttcatac	tctttctttg	cacgcgtcca	60
tctcgagcta	ttctattcct	ctcatccctt	gcctacacta	atctgcactt	ggatctcaaa	120
ttcaagttcc	tctattttcta	ttaatccatg	attatggaca	caggaacgcc	cctcctcttt	180

cttttcttat	taataacctc	gtcgagtcct	cttgtaattg	tttctgcaaa	tttctacaac	240
gatgtcgaca	tcacatgggg	cgatcgtcgt	ggtaaaatcc	ttgacaatgg	ccaacaatta	300
cagcttactc	tggatcgcac	ttcaggttct	gggtttcaat	ccaagaatga	gtatctcttt	360
gctaaagtgt	atatgcaaat	caagttggta	cctgggaact	ctgccggcac	agttactgct	420
tattatctgt	cgtctcaagg	tcccaagcac	gacgaaatag	actacgaatt	tctaggcaac	480
ctctctggag	atccctatat	tatgcacacc	aatatct			517

<210> 889

<211> 543

<212> DNA

<213> Pinus radiata

<400> 889

ctcgtgccgc	ttcagtttcg	ggcgccagta	aggtcgttgg	aagccatgaa	gaggacacag	60
tttcttggtc	tgttttctcat	tctgttactc	cattctgctg	ccatggctac	cactcccagg	120
aagccagtga	gtgtgccctt	tcacaacaat	tatgtcgcca	gctggggctc	agatcacatc	180
aaacaattcc	atggcggtcg	aaagactgag	ctgctcctca	acaaacagta	tggtgcgggg	240
tttgagtcca	aggggacata	tttatttggg	catttcagta	tgcagataaa	gctgggtgcc	300
ggtgattccg	ctggcactgt	caccgccttt	tatctttctt	ctcagactgc	agagcacgat	360
gagatagact	ttgaattctt	ggggaacaag	tcgggggaac	cctacattct	tcagaccaat	420
gtatttacgg	gcgggaaggg	tgagagagag	caccgaatat	acctctgggt	cgaccccacc	480
aaggattacc	attcctatgc	tgtgctctgg	aacatgtacc	aaattgcatt	tttggtagat	540
gag						543

<210> 890

<211> 234

<212> DNA

<213> Pinus radiata

<400> 890

tacatacaga	ttcggatggg	ttagcatgaa	cctcacgctc	gcaccggggac	actctgcaag	60
agtggacgat	gcttattata	tgtcttctaa	caccaacatg	aatagggacg	agctggactt	120
tgagtttctg	gggaacagaa	gtggagagcc	atatgctctg	cacacaaaca	tctatgcaaa	180
gggtgtgggt	ggtaggggaac	agaggcacat	tctctggttc	gatccaacga	caca	234

<210> 891

<211> 311

<212> DNA

<213> Pinus radiata

<400> 891

tgtttgcaga	gattttgttg	ggcaatgctg	atcaagatgg	tccccaaact	gttgctgggtg	60
ctcttggtag	ctgcaatggc	tgctatggct	gcctcacctc	ctaagcctgt	ggacgtacca	120
ttccccaaaa	attatgtacc	cacttgggct	gctgatcata	tcaagtacat	caatgggtgga	180
aatgagggtc	agctttctct	agacaaatgg	acaggtagctg	gcttccaatc	caaggggtacc	240
tacttgtttg	gacactttag	tatgcagata	aagatgggtc	ctggtgactc	tgcaggcact	300
gggactgcct	t					311

<210> 892

<211> 377

<212> DNA

<213> Pinus radiata

<400> 892

caacgagagg	ctgggaggtcc	catatcctaa	gaaacagccc	atgaggggtat	cctcttcaat	60
ctggaatgca	gataactggg	ctactcaagg	tgggagggtc	aagataaact	ggagccattc	120
tccttttatc	tcactttaca	aaagggttcga	catcgatgca	aaccaatagc	gattaaatgg	180

agaatcaaga ggggtttattg agaatggaag taagtgggtg gacaggccct ctcattcttc	240
ccttactcca ttacaaaggc gaatgctccg atgggtgcat cggaactata tcatctatga	300
ctactgcaag gattcgacca ggttttccac ttcgccacct gagtgtgcag gcctccgctt	360
ctagtgtgtc tctatat	377

<210> 893

<211> 319

<212> DNA

<213> Pinus radiata

<400> 893

tgtttgcana gatttgttgg ggcaatgctg atcaagatgg tccccaaact gttgctggtg	60
ctcttggttag ctgcaatggc tgctatggct gcctcacctc ctaagcctgt ggacgtacca	120
ttccccaaaa attatgtacc cacttgggct gctgatcata tcaagtacat caatgggtgga	180
aatgagggttc agcttttctct agacaaatgg acagggtactg gcttccaatc caagggtacc	240
tacttgtttg gacacttttag tatgcagata aagatgggtc ctggtgactc tgcaggcact	300
gtgactgcct tttatctat	319

<210> 894

<211> 342

<212> DNA

<213> Pinus radiata

<400> 894

gggtagcagc gtagtgcaga taagctgttg ttaaaatggc ttctttgagt atgcagagct	60
gcttcttaat tctggctctt tgcttctggg catcccattg tgcacagttt aatgatattct	120
tcgagcccag ctgggcgaca gatcatgtta tgtatgaggg agagctgttg aagcttaagc	180
tggacaatat ttccggggct ggctttgctt ccaagacaac atatttggtt ggaaaagcag	240
gggcacagat taagctcggt ccagggtgact ctgcaggcac agttactgct ttttatatgt	300
cttctgaggg aactctgcac gacgaattcg atttcgaatt ct	342

<210> 895

<211> 529

<212> DNA

<213> Pinus radiata

<400> 895

ctggcttcca atccaagggt acctacttgt ttggacactt tagtatgcag ataaagatgg	60
ttcctggtga ctctgcaggc actgtgactg ccttttatct atcctcccag aatgccgagc	120
acgatgaaat agattttgag ttccctgggca ataggtctgg acagccttac attctccaaa	180
ctaattgttt cagtggagga aaaggaaaca gagagcagag gatatacctc tggtttgacc	240
ccacaaaaga ttaccatgcc tactctgtgc tctggaacat gcatcagatc gtattctttg	300
tggacgatgt ccccatcaga gttttcaaga atagcaggga cttaggagtg aggtacccat	360
ttaaccagcc catgaaaata tactcaagcc tgtggaatgc tgatgactgg gccacaaggg	420
gtgggctgga gaagacagat tggagcaaag caccatttgt tgcatcatac aggggattcc	480
acgtggatgg gtgtgaggcc tctgtaactg agtcgacttg tgctactca	529

<210> 896

<211> 501

<212> DNA

<213> Pinus radiata

<400> 896

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ttggacattc agtatgcaga taaagatggg tctggtgac tctgcaggcg ttgtgactgc	120
cttttattta tcctctcaga actctgaaca tgatgaaata gactttgagt tcttgggcaa	180
taggtctgga caaccttaca ttctccaaac taatgttttc agtggaggaa agggggacag	240

agagcaacgc	gtatatctct	ggtttgaccc	cacaaaagac	tatcattcct	acactgtcct	300
ttggaatatg	catcagattg	tattctttgt	ggatgatgtc	cccatcagag	ttttcaagaa	360
cagcaaggat	ttaggagtga	ggtatccatt	caaccagccc	atgaaaatct	attcaagctt	420
gtggaatgct	gatgactggg	ctacaagggg	tgggttggag	aagacagact	ggagcaaggc	480
accctttgtt	gcatacata	a				501

<210> 897

<211> 542

<212> DNA

<213> Pinus radiata

<400> 897

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aatccttgaa	atggccaaca	attgcagctt	actctggatc	acacttcagg	ttctgggttt	120
caatccaaga	aggagtatct	gtttgctaaa	attgatatgc	aaatcaagtt	ggtacctggc	180
aattctgcag	gcacagttac	tgcctattat	ctgtcgtctc	aaggteccaa	acacgacgaa	240
atagaccatg	aatttctagg	caacctttcc	ggagatccct	atattatgca	cactaatatc	300
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gcttttcaca	cttactccgt	gctctggaca	ccaaatcaaa	ttacattgtc	tgtggacggg	420
attcccgttc	gtgtgtttta	gaacagggag	acagagttgg	ctaaagtgga	tagcaattat	480
cactgtccta	acagccaagc	aatgaggggc	tattcaagcc	tctggaatgc	agatgattgg	540
gc						542

<210> 898

<211> 350

<212> DNA

<213> Pinus radiata

<400> 898

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cactgtgact	gccttttata	tatectccca	gaatgccgag	cacgatgaaa	tagattttga	180
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aaaaggaaac	agagagcaga	ggatatacct	ctggtttgac	cccacaaaag	attaccatgc	300
ctactctgtg	ctctggaaca	tgcatacaat	cgtattcttt	gtggacgatg		350

<210> 899

<211> 356

<212> DNA

<213> Pinus radiata

<400> 899

gtttgcacag	actcgttggg	tgcttactga	aagatagcta	gcaggaggct	ggtgcttttc	60
taggcaatgc	tgattaatat	ggtgcccatt	gtactgttat	ttctcttggg	agcggcaatg	120
gctgctactg	ctacccacc	tccgaagcct	gtggatgtgc	cattccaaaa	aaactatgta	180
cccacctggg	cttctgatca	tatcaagtac	attaatgggg	ggaacgaagc	gcactttctc	240
ttgacaaatg	gacaggtact	ggcttccaat	ccaagggtag	ctacttgttt	ggacatttca	300
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<210> 900

<211> 248

<212> DNA

<213> Pinus radiata

<400> 900

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atgtcttccc	aaggcgatca	gcatgacgaa	ttcgactttg	aatttttggg	gaatacttct	120

ggggagccgt	acgctgtgca	gaccaatggt	ttttctaagg	gggttggcaa	gcgtgagcag	180
cggattttct	tatgggttcga	cccaaccacg	gatttccatt	cctattcctt	tctctggaaa	240
ccgcagca						248

<210> 901
 <211> 376
 <212> DNA
 <213> Pinus radiata

<400> 901						
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tttctcttga	caaatggaca	ggtactggct	tccaatccaa	gggtagctac	ttgtttggac	180
atttcagtat	gcagataaa	atggttcctg	gtgactctgc	aggcgttgtg	actgcctttt	240
atttatcctc	tcagaactct	gaacatgatg	aaatagactt	tgagttcttg	ggcaataggt	300
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aacgcgtata	tctctg					376

<210> 902
 <211> 416
 <212> DNA
 <213> Pinus radiata

<400> 902						
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ttcagtatgc	agataaaagat	ggttcctggg	gactctgcag	gcgttgtgac	tgctttttat	360
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<210> 903
 <211> 417
 <212> DNA
 <213> Pinus radiata

<400> 903						
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aactggaaga	aaaccattgg	cttcaatggg	acccttctaa	ttgagcctaa	gccacaagaa	180
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gggcttggag	gagaatttaa	attaaatggt	gagtgcacac	atgcaaccct	ctctgggcac	300
agctgtcatc	acgagctgga	aatagcacag	atttatggga	tgcttgga	cattgatgca	360
aacactggag	atgccccaaac	aggctgggat	actgatcaat	ttcttacgga	tattgga	417

<210> 904
 <211> 314
 <212> DNA
 <213> Pinus radiata

<400> 904						
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agcaactttg	atcatgttga	ctgttataaa	aaatggaggg	cttgccacctg	gtggtttcaa	120
ctttgatgca	aaactgagga	gggaaagtgt	agatgtagaa	gatctgttca	ttgctcatat	180
atcagggatg	gacacttttg	cgcgaggatt	gagaaaatgca	gctcaactgc	tgaggatgg	240
aacattaaca	gagcttggtc	gaaagcggtta	tgaatccttt	gattcaaaat	tgaggacttc	300

aattgaggaa ggca

314

<210> 905

<211> 323

<212> DNA

<213> Pinus radiata

<400> 905

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ctttgatgca aaactgagga gggaaagtgt agatgtagaa gatctgttca ttgtcatat	180
atcagggatg gacacttttg cgcgaggatt gagaaatgca gctcaactgc tgcaggatgg	240
aacattaaca gagcttgttc gaaagcgtta tgaatccttt gattcaaaat tgggagcttc	300
aattgaggaa ggcagtctca gct	323

<210> 906

<211> 421

<212> DNA

<213> Pinus radiata

<400> 906

aaagatatgg gcttggagga gaatttaa ataaatgttga gtgcaatcat gcaaccctct	60
ctgggcacag ctgtcatcac gagctggaaa tagcacagat ttatgggatg cttggaaaca	120
ttgatgcaaa cactggagat gcccacacag gctgggatac tgatcaattt cttacggata	180
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ctcatatata gggcatggac actcttgac ggggcttgag aaatgcggct aagctgttgc	360
aggatggaag aatgccagag cttgttgcaa aacgttatga aaccttcaat tcagaactag	420
g	421

<210> 907

<211> 530

<212> DNA

<213> Pinus radiata

<400> 907

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cgtcctctgt ggggaactgc ccagttgttt atgcatcccc gctacatgca tggagctgct	180
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gcagtcaatt ggaagaagaa tataggcttc aatggaactc ttctaattga acccaaacca	420
caagaacctc caaaacacca gtatgactgg gatgctgcaa caacaatggg tttcctgcag	480
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<210> 908

<211> 373

<212> DNA

<213> Pinus radiata

<400> 908

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aaatgttgag tgcaatcatg caaccctctc tgggcacagc tgtcatcacg agctggaaat	180
agcacagatt tatgggatgc ttggaaacat tgatgcaaac actggagatg cccaaacagg	240
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tataaagaat ggtgggcttg cacctgggtgg gttcaacttt gatgcaaaat tgcggagaga 360
gagtgtagat gtg 373